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SOCIAL SUPPORT AND BARRIERS TO POSTSECONDARY EDUCATION: EXPERIENCES OF STUDENTS WITH PHYSICAL DISABILITIES

BY

MARTIN PATRICK ISADORE ANDERSON ©

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH IN
PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE
IN
OCCUPATIONAL THERAPY

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SPEECH COMMUNICATION

November 26, 1990

Mr. Martin Anderson
Dept. of Occupational Therapy
Faculty of Rehabilitation Medicine
University of Alberta
Edmonton, Alberta T5J2J7

Dear Mr. Anderson:

You have my permission to use the illustration of the model of social support contained in my *American Journal of Community Psychology* article in your thesis. You will find an updated discussion of social support measures in a chapter in my edited volume ("Social Support: Conceptual Clarification and Measurement Options," In C. H. Tardy, Ed. *A Handbook for the Study of Human Communication: Methods and Instruments for Observing, Measuring, and Assessing Communication Processes*. Ablex: Norwood, NJ, 1988.

I would also be interested in learning of your work in this area.

Respectfully,

Charles H. Tardy

Charles H. Tardy, Ph.D.

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FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and research for acceptance, a thesis entitled Social Support and Barriers to Postsecondary Education: Experiences of Students With Physical Disabilities submitted by Martin Patrick Isadore Anderson in partial fulfilment of the requirements for the degree of Master of Science in Occupational Therapy.

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J.W. VARGO Ph.D.

Date: November 11, 1992

DEDICATION

To my wife, Ruth Soult, for strong support and love.
To my sons, Eric and Neil, for their love.
To my parents, Charles Gordon Anderson and Isabella Hertz Anderson, for instilling in my heart a care and a concern for humanity and creation.
To my sisters, Annie, Gail, Linda and Sandra,
and my brothers, Richard, Gary, Brian, Keith and Bradley.

I Love You All.

ABSTRACT

Individuals with disabilities are less likely to receive postsecondary education than their non-disabled peers. It has been suggested that this is related to barriers faced by students with disabilities and the lack of appropriate supports to address these barriers. In this study a group of 26 students with disabilities and 66 non-disabled students were surveyed regarding social support. Of the eight social support variables measured, only network composition was significantly different between groups. Students with disabilities included, on average, more professionals within their personal support network. The social support data was combined and analyzed for relationships (Pearson's correlation coefficient), with seven independent demographic variables. Only gender was found to be correlated with overall social support, while age was correlated with a number of sub-elements of social support. The interview data was further subjected to a content analysis, regarding themes of social support and barriers to education. Both groups described a set of similar themes relating to social support experiences and activities of daily living. As well a set of social support themes unique to students with disabilities emerged. These themes related to overcoming barriers or to emotional support and ongoing adjustment to disability. Barriers as a set of themes were reported more readily and with greater detail by students with disabilities. The clinical significance of these results to occupational therapy practice are discussed as well as future research directions.

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CHAPTER 1

STATEMENT OF THE PROBLEM

In society a person with a disability may face a number of limitations. The Premiers Council on the Status of Persons With Disabilities(1990) has identified limitations in the following areas: employment, recreation, transportation, housing, accessibility, personal supports, financial supports, education and training. In a Canadian Health and Disability Survey(1984) only 15.3% of disabled adults access post secondary education as compared to 31.6% of the non-disabled adults.

It has been suggested that some of the conditions that limit access to appropriate education and training are a "lack of adapted equipment, modified instructional techniques, modified course loads, appropriate programs, and a range of other supports as well as the existence of physical barriers that often result in inaccessibility of training programs." (The Premiers Council On The Status Of Persons With Disabilities, 1990, p. 7). In spite of these conditions, 15.3% of disabled adults in Canada have been able to access post-secondary education.

What is the impact of these limiting conditions and barriers upon physically disabled students who attend post-secondary institutions? Perhaps the personal support networks of students with disabilities play a role in coping with the potential barriers to post secondary education.

The problems identified as important to this study are: How is support available to students with physical disabilities? and, how do the social networks of students with disabilities compare to the networks of non-disabled students?

To examine these questions a case control cross-sectional design was used. Similarities and differences in perceived social support between a group of post-secondary students with disabilities and a non-disabled student group and the barriers and negative, educationally related, experiences that students described are explored within the current study.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The literature cited below represents the major themes that are of particular relevance to this study. These themes include: conceptualization of social support; literature regarding social support and post-secondary students; developmental literature pertaining to young adulthood; literature in the area of social support and physical disabilities; literature documenting the experiences of students with disabilities; literature pertaining to possible relationships between gender, age, marital status and social support; and that literature linking social support to occupational therapy. Each theme will be dealt with separately.

Social Support

Many authors have expressed concern over the lack of a consistent conceptual framework and standardized terminology in the social support literature (Gottlieb, 1985; Brownell and Schumaker, 1984; Tardy, 1985). This recent definition of social support is useful in attempting to describe this complex phenomena.

> Social support refers to processes of interaction in relationships and social structures that shore up coping, esteem, belonging, and competence through actual or predictable exchanges of tangible or psychosocial resources. (Gottlieb and Selby, 1989, p.8)

Tardy (1985) has also attempted to remedy these conceptual problems. Tardy provides a visual model of social support that effectively summarizes the conceptual work of previous authors, (figure 2.1). The elements included in this model are as listed below (figure 1.1). Gottlieb (1989) suggests that each of Tardy's elements represents a dimension of social support that can be analyzed in social support research.

FIGURE 1.1

Aspects of Social Support.

SOCIAL SUPPORT

Aspects	Types					
DIRECTION	Received	Provided				
DISPOSITION	Available	Enacted				
DESCRIPTION/ EVALUATION	Described	Evaluated				
CONTENT	Emotional	Instrumental	Informational	Appraisal		
NETWORK	Family	Friends	Neighbours	Co-workers	Community	Professionals

Adapted from Tardy by permission, (1985) pg. 200.

In Tardy's model, direction refers to the provision or reception of support. This would be similar to the concept of reciprocity.

Disposition, the second area of social support, refers to the availability of support versus its actual exchange. Available support refers to a "psychological sense of support"(Gottlieb,1983) or the perception that support would be predictably provided if needed, while the actual exchange involves the transfer of these supportive resources.

Evaluation is the term used to describe an individual's perception of an exchange; description refers to the nature of support. For example, children may evaluate their friendships to be positive, while parents may describe them as negative.

Content refers to the type of social support. Five social support content areas are described by Tardy (1985): emotional support, monetary or physical aid, appraisal support (feedback regarding performance), informational support, and instrumental support.

The final area, social network, is the source of support. Social Network is the actual set of human contacts that provide support and the structure through which social support is provided. The social network is equivalent to the social environment. Due to the quantifiable nature of the social network, it is often used in social support research (McLanahan, Wedemeyer and Adelberg, 1981; Mitchel and Tricket, 1984; Wellman, 1981).

The current study includes social network in the evaluation of social support. The literature regarding social network includes a number of conceptual variables that are generally distinct from the previously described social support definitions. Mitchel (1969, as in McLanahan et al., 1981) has provided the following social network conceptual definition:

> 1) Anchorage: the designated centre of the network called the ego. (The individual whose network is being described).
> 2) Density: the degree to which network members interact with each other.
> 3) Content: the degree to which relationships are multiplex (based upon a single or multiple relationships or roles, not to be confused with social support content).
> 4) Direction: the degree to which relationships are reciprocal and symmetrical (no different from previous definition).
> 5) Durability: the degree to which relationships are based upon obligations.
> 6) Intensity: the depth of the obligations.
> 7) Frequency: the amount of contact among members or between the ego and individual members.
> 8) Range: the size of the network.
> (p. 602)

These conceptual definitions help to describe more specifically the nature of the social network aspect of social support, thereby expanding upon Tardy's (1985) model and providing a more comprehensive framework. In the current study these definitions will be used when analyzing social network as it relates to social support.

Tardy's conceptual model describes a set of relationships among social support constructs that are found in the literature (Gottlieb, 1989; Berrara and Ainley, 1983; Gottlieb, 1978). The model provides a theoretical structure for ongoing research that was previously lacking. In the current study, Tardy's model will be used to analyze the social supports of the students that are surveyed.

McLanahan et al. (1981) described two "principle hypotheses" pertaining to the relationship between social network structure and social support:

> Close-knit networks, consisting of dense, multiplex, durable and intense ties which are positively associated with the provision of services and emotional support; and, loose-knit networks, which are positively associated with the communication of new information and the development of new social contacts. (p. 603)

Both of these types of social networks may be important to post-secondary students with physical disabilities. It is likely that these students require both the emotional and instrumental support provided by a close-knit network, as well as the informational support provided by a loose knit network.

Gottlieb (1985) described social support research in terms of macro, mezo and micro levels of analyses. Macro and mezo levels of analysis describe the social network in terms of the number of social contacts and general relationships amongst network members. The descriptions of these two levels of analyses are similar to the definitions already provided. However, at the micro level, greater emphasis is placed upon the qualitative analysis of social network relationships. This includes the quality and intensity of the relationships as well as the specific supportive behaviours that are described.

Range or size is one of the quantifiable variables of the social network. What is a reasonable size for an individual's social network? Erickson (1984) suggests that "the average expected personal network of an adult may consist of three to six intimates, plus some 25 to 40 others known to the focal person and seen on a regular basis" (p. 188). Groups, such as students or persons with disabilities may vary from the general population regarding the size of their social network.

Flaherty, Moises and Pathak (1983) caution against over emphasis on the importance of the number of social contacts, stating:

> There is no convincing evidence in the literature to indicate that amount of support received is linearly related with the number of support members identified by the recipient. (p. 521)

Morgan, Patrick and Charlton (1984), in a study of persons coping with chronic disability, suggest that the quality of social support and social network relationships is of greater importance when assessing the social support of persons with disabilities (i.e. the micro level of support analysis). Gottlieb (1985) has developed a list of "emotionally sustaining helping behaviours" that individuals may display when demonstrating support. This analysis of the content of social support through analysis of behaviours is one approach to evaluating the quality of support that is provided. It is not only the number of available contacts that are important because the type and quality of the support that is provided by these contacts also plays an important role.

In this study quantitative and qualitative methods are included in the design. The qualitative measures are designed to gather data regarding students' perception of the support that is provided, including supportive behaviours demonstrated by network members and students' experiences and perception of barriers to university.

Social Support and Young Adulthood

Two studies have examined the social networks of post-secondary students. Antrobus, Dobelaer and Salzinger (1988) studied 125 college students and described social networks with 4.5 household members, 2.3 on campus friends and 2.7 off campus friends. Culbert, Good and Lachenmeyer (1988) completed a similar study of 200 commuting college students, and described networks with a mean number of 3.28 off-campus friends and 1.86 on campus friends (no data were provided on household size). Both of these studies found that network size was not predictive of school success.

Social support may also be effected by developmental issues. In 1989, 81% of undergraduate students in Alberta were under thirty-nine years of age (Education in Canada a Statistical Review for 1988 and 1989; 1990). Levinson (Levinson, Darrow, Klein, Weinson and McGee, 1978), in a study of adult men, described two developmental stages and a developmental transition period or crisis that occurs between 17 and 39 years of age. The two stages are entering adulthood (17 to 29 years) and settling down (30 to 39 years). According to Levinson these two stages are separated by the thirty year crisis. The major tasks commonly attributed to entering adulthood are: exploration of adult roles suitable to the individual, and development of some degree of stability with respect to adult roles. According to Levinson, specific events which assist in the attainment of these tasks are as follows: the adoption of a vision or "dream", forming "mentor" relationships, developing an occupation, and forming love relationships.

The latter half of this period, from thirty to thirty nine years, the "settling down" period, is characterized by establishing a stable niche in society. The crisis to be resolved at thirty years of age is a period of self reflection and questioning of individual achievements during early adulthood. Social support may be an issue in this developmental process. This study has included age as a variable in analysis of social support.

Levinson has been criticised on the grounds that his use of a male sample disallows the generalisation of his findings to women (Craig, 1989). A split or divided vision is apparently more common in women. The division is primarily related to women's needs to fulfill both career and family goals. Women experience the crisis at thirty years of age differently from men, in that they are more likely to make complete changes in their life dream. Also women apparently do not enter into mentor relationships as often as men. The application of stage and crisis models of development to women has also been criticised (Stewart, 1977; Furst, 1983; Droege, 1982; Adams, 1983; cited in Craig 1989). Spricer (1981) in her qualitative study of a group of women found that women tended to experience a developmental course that was more affected by social, cultural and economic variables and less by age related crisis and developmental stages. Women with disabilities could be expected to demonstrate similar variations from Levinson's model.

Social Support and Gender

A number of studies report that women receive more support than men (Hirsch, 1989; Cohen, McGowan, Fooskas and Rose, 1984; Burke and Weir, 1978). As well women are greater providers of emotional support than men (Wellman and Wortley, 1989; Wellman and Wortley, 1990; Stokes and Wilson, 1984). These differences have been explained by suggesting that women are more likely to verbalize emotional support, men are more likely to exchange material aide (Wellman, 1990). These findings raise questions regarding gender and social support. Gender was be one of the variables examined in this study.

Occupational Therapy and Social Support

The theoretical literature on occupational therapy includes social support in a number of ways. Kiehlhofner (1985) refers to the importance of environmental feedback in his "Model of Human Occupation"; this emphasis upon feedback as part of occupational performance is similar to Gottlieb's definition of social support. Reed and Sanderson (1980) also describe the important role of the social environment in occupational performance. Social support provides feedback to an individual regarding competence and mastery as well as defining the significance of activities in a socio-cultural context. Social activities themselves have been described as supportive (Heller, Swindle and Dusenbury, 1986, as cited in Gottlieb and Selby, 1989).

> A social activity is said to involve social support if it is perceived by the recipient of that activity as esteem enhancing or if it involved the provision of stress related personal aid (emotional support, cognitive restructuring, or instrumental aid (p. 8).

Not only does social support provide feedback regarding performance of activities, but the activity itself may be perceived to be supportive.

Social Support and Disability

Social support and the social networks of populations with chronic illness or physical disability have also been studied. Kozloff (1982) has demonstrated that following head injury, there is a negative effect on social network size, a positive effect on network density and a positive relationship with ratio of kin in the social network. Other studies have demonstrated a positive relationship between social support and recovery from stroke (Evans and Northwood, 1953; Robertson and Suin, 1968), and in post-burn recovery (Davidson, Bowden and Feller, 1981). In a study of 27 children with congenital or acquired amputations, lack of support was determined to be a significant predictor of depressive symptoms (Varni, Rubenfeld, Talbot and Setoguchi, 1989), while Morgan et al (1984) demonstrated that social isolation is positively related to severity of disability. In one American study by Stevens and Norris-Baker (1984) of support networks of college students with disabilities, subjects averaged 14.1 network members including an average of 4.8 family members and 9.3 friends. This study also found, in a comparison of students with physical disabilities and their able bodied peers, that the students with disabilities received higher levels of transportation and housekeeping support while able bodied students reported higher levels of financial support and assistance with health care. This study was limited in that it did not collect data on a wider range of social support variables.

Unfortunately, due to the lack of consistent terminology and procedures used in these studies of social support, it is not possible to compare their results. It is likely that the barriers and lack of support, described by the Premiers Council On the Status of Persons With Disabilities (1990), limit persons with disabilities in their exploration of adult tasks and roles. Possibly if the appropriate supports were available, transition through this period might be eased.

Disability and Post-Secondary Education

A number of studies have been conducted in Montreal regarding the experiences of college students with physical disabilities. Fichten, Amsel, Bourdon and Creti (1987) reported two primary issues regarding interactions between students with disabilities and their professors:

> Professors are more comfortable with able bodied than disabled students and that professors who have taught disabled students are more comfortable with such students and more interested in teaching them again (p. 13).

Fichten et al. (1987) have also identified a number of behaviours that were rated, by both professors and students with disabilities, as to their appropriateness. Generally student initiated behaviours were rated highest by both students and professors.

Fichten and Amsel (1988) showed that non-disabled students tended to view people with disabilities more negatively. As well both students with disabilities and their non-disabled peers share negative myths about people with disabilities, although students with disabilities were less uneasy with people with similar disabilities (Fichten, Robillard, Judd and Amsel, 1989). Further Fichten, Amsel, Robillard and Tagelakis (1991) feel that beliefs held by able bodied students are the primary cause of uneasy interactions between students with disabilities and their non-disabled peers.

These studies have identified a number of potential psycho-social barriers to post-secondary education, such as negative attitudes and feelings. Unfortunately these uneasy feelings could interfere with the provision of necessary supports. A list of appropriate behaviours (Fichten et al., 1987) may serve as a guide to students with disabilities in overcoming these barriers.

Physical barriers are also a potential limitation. A number of environmental features have been recommended for students with disabilities (Fichten et al., 1987). These include: appropriate signage in elevators, barrier free design, wheelchair accessible labs and studios, and appropriate communication and audio-visual equipment. However Burbach and Babbitt (1988) found that even when environments were appropriate, students with physical disabilities continued to report that getting from class to class was difficult. Perhaps this is an example of the need for individualized adaptations in planning for people with special needs.

Summary

Post-secondary education experiences, within university or college settings, provide individuals with unique challenges and support needs. For example, university/ college students may spend greater amounts of time in educational pursuits than they did in high school while being away from familiar networks in their home community. It is also possible that the university community provides opportunities for the establishment of new, and possibly more appropriate, social connections. These attachments may facilitate coping in the university environment.

There is a lack of empirical work concerning social support and social networks of physically disabled post-secondary students reported in the literature, with the exception of the identification of support as a particular concern of disabled students (The Premiers Council on the Status of Persons With Disabilities, 1990). Specific data on the social supports of students with disabilities would provide greater insight into the need, both for appropriate clinical interventions, as well as for further research in the area.

Ensuring equal access to post-secondary education is one of the recommendations of the Premiers Council Report (1990). In attempting to meet this objective a clearer understanding of how persons with physical disabilities presently access, encounter and overcome barriers to their post-secondary education is needed. Support is one of the means identified by the Premiers Council in overcoming barriers to educational access, however little empirical information is currently available. There is also little empirical data on the similarities and/or differences among disabled and non-disabled students regarding their needs or the availability of support.

Finally occupational therapists, and other service providers, are involved in the provision of professional support services and with facilitating the effectiveness of family and community supports. To do this more effectively, these professionals need empirical support for further program development. To address some of these issues, the objectives of this study were to:

1. describe and compare the social support of a group of physically disabled students and a non-disabled control group, both enroled at the University of Alberta or Northern Alberta Institute of

Technology (N.A.I.T.) including the social network characteristics, and the content of the support provided.

2. describe the relationships between certain demographic and life history variables and the social support for each participant. The life history variables were:
    - disability status (disabled/non-disabled)
    - number of years of post-secondary education
    - place of residence (at home/off campus with roommates/in residence/off campus and alone)
    - place of residence prior to university (urban Edmonton/urban other than Edmonton/rural)
    - age (in years)
    - gender (male/female)
    - marital status

Concerning the place of residence prior to and during university studies, an attempt has been made to capture any variation in support related to proximity of or familiarity with network contacts. For example students living in residence or with room-mates may have access to different supports than students living alone. As well students either familiar with urban settings or originally from Edmonton and presently residing in Edmonton may experience the transition to university life and university supports differently from students entering university from a rural centre.

In addition to overall social support, a number of sub-elements of social support served as dependent variables:

- network size
- network categories (friends/family/co-workers/professionals)
- support initiation
- support availability
- support satisfaction
- support reciprocity
- network conflict
- network multi-dimensionality
- frequency of contacts
- length of relationships
- intensity of relationships
- network density

3. outline the barriers that both groups of students report encountering when accessing post-secondary education.
4. discuss possible interventions that could address the support needs described by the students.

Findings from this study will guide the development of appropriate occupational therapy or other health services.

CHAPTER 3

METHOD

This study used a case-control design (Wissow and Pascoe, 1990) and employed a survey questionnaire and follow-up interview to gather data. Both quantitative and qualitative data were collected. The combination of methodologies was important to the outcome of this study, for the following reasons:

- the quantitative methods enable the comparison of the two student groups, using a standardized instrument which has been tested for reliability and validity.
- the qualitative methods provide data on a broader range of social support elements and provide a mechanism to obtain the students' perspectives regarding the social supports and barriers they face in accessing post-secondary education at the University of Alberta.

Subjects

Two samples were drawn: a sample of students with disabilities (Group A), and a sample of non-disabled students (Group B).

Group A.

The first targeted subjects were students who had a physical disability and were registered with the University of Alberta (U OF A) Disabled Student Services (DSS). Fortyeight students were identified and invited to participate in the study. A letter (Appendix A), an invitation to participate (Appendix B), and a stamped addressed envelope were sent out by the U OF A DSS. Twenty responses were received and of these, 18 students participated in the study, representing a 38% return rate.

In order to increase the numbers in Group A a similar procedure was followed through the Northern Alberta Institute of Technology (NAIT) Services to Students With Disabilities (SSWD). Eighteen invitations were sent out, eight students responded, representing a 44% return rate. The total number of students with disabilities was raised to 26 and the final return rate was 39%. The demographic data are summarized in Table 3.1.

The students in Group A reported a number of different disabilities. They are as follows:

- four with spinal cord injuries
- three with cerebral palsy
- two with head injuries
- two with multiple sclerosis
- two with orthopaedic injuries
- two with fibromyalgia
- two with back pain
- one with hydrocephalus
- one with congenital hip dysplasia
- one with rheumatoid arthritis

- one with chronic fatigue syndrome
- one with a cerebral vascular accident
- one with a cardiac condition
- one with bilateral upper limb amputation
- one with osteogenesis imperfecta

These students reported functional limitations ranging from total dependence in self-care and requiring a mobility aid, to requiring assistance with fastening fasteners or climbing stairs or functional limitations dependent upon pain or fatigue. A wide range of medical diagnosis and functional ability levels are represented within the group.

Group B.

The first attempt to recruit control subjects required students from Group A to nominate non-disabled peers who would meet certain matching criteria (age, gender, marital status, year of post-secondary education, residence prior to entering college and present place of residence). This procedure was only successful in recruiting one control subject. Students from Group A were unable to nominate peers matched on even two variables, age (within five years) and gender.

In order to recruit an appropriate control group, students listed in the U of A student telephone directory were randomly polled and invited to participate in the study. Eighty-three students expressed an interest and were sent a consent form (Appendix C), a demographic questionnaire, the Perceived Support Network Inventory (PSNI) and a self-addressed envelope. Sixty-seven students responded, one subject reported having a disability and was transferred to the Group A. This represented an 81% return rate. Refer to Figure 3.1 for a demographic summary.

Students were also requested to participate in an interview, to discuss their responses on the survey. All but one of the Group A students participated, while 22 of the 66 Group B students volunteered.

Table 3.1 Independent Variables for Group A and Group B.

Independent Variables	Group A # of students	Group A Percentage	Group B # of students	Group B Percentage
1. Year of Post-Secondary Education				
• First	4	16.0	5	7.9
• Second	2	8.0	13	20.0
• Third	6	24.0	12	19.1
• Fourth	2	8.0	10	15.9
• Fifth	3	12.0	12	19.1
• Sixth	3	12.0	4	6.4
• Seventh	3	12.0	3	4.8
• Eighth	0	0.0	4	6.0
• Ninth	2	8.0	0	0.0
2. Place of Residence				
• At home with parents	5	19.2	32	48.5
• Lived alone	6	23.1	4	6.1
• With spouse or roommate	14	53.9	27	40.9
• University residence	1	3.9	3	4.6
3. Prior Place of Residence				
• Rural	4	16.0	10	15.2
• Edmonton	12	48.0	17	25.8
• Urban other	9	36.0	39	39.0
4. Age in Years				
• <20	0	0.0	10	15.2
• 20-24	7	29.2	35	53.0
• 25-29	7	29.2	13	19.7
• 30-34	4	16.7	6	9.0
• 35-39	1	4.2	0	0.0
• 40-44	1	4.2	0	0.0
• 45-49	2	8.4	1	1.5
• 50 & >	2	8.4	1	1.5
5. Gender				
• Male	11	42.3	28	42.4
• Female	15	57.7	38	57.6
6. Marital Status				
• Married	6	24.0	13	20.0
• Single	19	76.0	52	80.0

Generalizability of sample

Group B is intended to serve as a peer comparison group for the Group A sample. Group B was compared to the general population of University of Alberta students on variables of age and gender to determine potential generalizability of data to this group.

The most recent data available on U OF A enrolment show a gender breakdown of 47% male and 53% female (U OF A, 1991/92). This compares quite favourably to the control sample with 42% males and 58% females. As well there are data on the age of U.A. students (University of Alberta, 1991). The University of Alberta data regarding age and gender were compared with Group B using a set of chi-square tests. The results of this analysis do not indicate any significant differences between the University of Alberta student population and Group B regarding age or gender. This supports the use of this sample as a representative control group in this study.

A number of further questions arose from the sampling procedure employed in this study:

1) Is Group A an adequate sample of students with disabilities at the University of Alberta and NAIT?
2) Are Group A and Group B similar in regard to the independent variables used in the quantitative analysis? i.e. years of post-secondary education,

place of residence, geographic place of residence prior to university, college entrance, age, gender and marital status.

These two questions have been analyzed through a set of chi-square and ANOVA analysis. The results guide interpretation of later analysis.

The fact that only 39% of students with disabilities surveyed participated in the study creates concern as to the adequacy of the Group A sample. Group A represents students registered with DSS, and may also only represent a sub-group who are more inclined to participate in research, for whatever reason. As a step towards demonstrating the comparability of Group A to the larger group of students with disabilities, Group A was compared to the University of Alberta DSS registrants regarding gender. Thirty-six percent of students registered with University of Alberta DSS are male and 64% female, compared to Group A who are 27% male and 73% female. To assess the significance of these differences a chi-square test was conducted. The results of this analysis suggest that Group A is not significantly different from the University of Alberta DSS registrants regarding gender. This indicates that Group A is representative of the University of Alberta DSS population.

In order to assess the comparability of Group A and B students on seven independent variables, that were used in further quantitative analysis, a set of chi-square tests and

ANOVAs were conducted. The results of this analysis supports the comparability of the two groups regarding geographic residence prior to university/college entrance, gender and marital status. Statistically there are significant differences regarding place of residence and age. In considering the importance of these differences, the planned analysis should be considered. The analysis involves a set of Pearson's correlations or eta calculations, as appropriate, on the pooled data of the two groups. Therefore the comparability of the two groups is of less concern than if tests of differences are calculated.

This study was limited to a single geographic location. Therefore caution is suggested in generalizing results to other settings as support needs may vary with environmental and cultural variations. As only university/college students with physical disabilities were included in this study, generalization to individuals from other disability groups and their adult training experience would not be appropriate.

Instruments

Three tools were employed in data gathering; a questionnaire, a semi-structured interview, and network diagram construction. These three instruments together gathered data on the previously identified theoretical elements of social support. The interview provided data on university students experiences with social support and the relationship between support and barriers to university education. As well the control group completed a demographic questionnaire.

The Perceived Support Network Inventory

The Perceived Support Network Inventory(PSNI) (Oritt, Paul and Behrman, 1985) was used as the questionnaire in this study. It consists of a total "social support" score and six sub-scale scores. These are as follows:

- social support (total PSNI score)
- perceived network size
- relationship categories (spouse/family/friends/co-worker/self-help group/professional/religious leader)
- support initiation
- support availability
- support satisfaction
- support reciprocity
- network conflict

The PSNI provided data on all of Tardy's social support variables as well as network variables of size and multi-dimensionality.

The authors report reliability and validity studies, of the PSNI on a sample of 146 college students. Results of these studies are as follows; test retest reliability of total PSNI score was 0.88 while sub-scale scores ranged from

0.72 to 0.87, construct validity ranging from 0.21 to 0.57, and internal consistency of 0.77. The reliability and validity estimates allow greater confidence when using this instrument as the primary quantitative data source in this study.

Students completed the inventory prior to the interview so that results could be discussed at the time of the interview. The inventory consists of two parts, first the subject identifies up to twelve people that they would turn to in times of stress. Subjects assign people to relationship categories i.e. spouse or partner, family member, friend, co-worker, professional, religious leader, and self-help group. Secondly the subject rates each person on a seven point Likert scale, regarding the incidence of the following support sub-elements: initiation, availability, satisfaction, reciprocity and conflict. As well subjects identify the type of support that each person would provide them with. A multidimensionality score is calculated by summing the types of support provided by each contact person. Once the inventory has been completed the results are copied onto a data summary sheet. The total number of contact people is the "perceived network size". The number of people for each relationship category are recorded. Subscale scores for each identified contact person are added to get a total subscale score and than divided by the number of contact people to get mean subscale scores. The total instrument score is calculated by adding the mean subscale scores together.

Interview.

The second data gathering technique is a semi-structured interview (see Appendix D). The interview served to elicit further information regarding network characteristics of actual disposition of support, the frequency of contacts, and the durability of relationships. Information regarding specific supportive behaviours was elicited. The interview included a set of open ended questions designed to elicit information concerning the barriers to post-secondary education and the role of social support in overcoming these barriers. Some of the questions in this interview are based upon questions used in clinical social support evaluation (Gottlieb and Copeland, 1989). As well, demographic data were obtained, either during the interview, or in a questionnaire, for those students who did not participate in an interview. This instrument has not been subjected to psychometric evaluation.

The interview was completed in an individual face to face format. At the beginning of the interview the use of the tape recorder was discussed. A number of social network structural variables were evaluated during the interview. For example frequency of contacts were elicited by asking subjects to estimate how often they had seen each contact person in the last month, while relationship length, as a measure of durability, was elicited by asking the subjects how long they had known each contact person.

Network diagram

The third data source, the network diagram, is a clinical instrument that is used during social network intervention to map or visually represent the social network. Maguire (1983) described the clinical use of social network mapping and Todd (1979) described a mapping procedure that included a rating of intensity of relationships and density of the network. A similar mapping technique was used in this study. This instrument has not been subjected to psychometric evaluation. However the diagram was constructed by the interviewer and the subject at the time of the interview, and an opportunity was given for the subject to check and verify the network construction as a check on the credibility of this data source (Krefting, 1991). As well inter-rater reliability was calculated at the time of analysis and will be discussed further later.

The network diagram was administered as part of the interview. Again a number of social network structure variables are assessed at the time of the diagram construction. Intensity is assessed on a seven point scale. Students placed their network contacts on the sheet and rated the "closeness" of the relationship, by placing contact names in the first circle if they felt close to the individual and farther away depending on the closeness of their relationship with that person. Next the students identified the relationships between network members. In this way a sum of relationships was obtained. Density was calculated as a ratio of total relationships to total possible relationships (Mitchel, 1969 as cited in McLanahan et al., 1981).

Procedure

The validity or credibility of qualitative research methods can be demonstrated through the use of more than one observer, methodology or source of data (Denzin, 1978; Krefting, 1991). The intent of this "triangulation" process is to ensure that results are not affected by the methodology. Triangulation was achieved in this study in two ways. First, a second evaluator, who was not an occupational therapist, encoded five of the interviews (Madill, Brintnell, and Stewin, 1989). A percent agreement was calculated using the following formula (Sulzer and Mayer,1972):

$$\frac{\text{No. of agreements}}{\text{No. of agreements + No. of disagreements}} \text{ X } 100 = \%$$

An acceptable inter-rater reliability level (0.80) was obtained. It is felt that the use of a non-occupational therapist strengthens the evaluation of the trustworthiness of the data, by ensuring that discipline specific bias, related to occupational therapy, will not be brought to the analysis by the second evaluator.

Further triangulation was achieved through the use of both qualitative and quantitative research methods as well as multiple sources of data (questionnaire, interview, and diagram construction).

Once individuals had agreed to participate in the study they were mailed a letter of consent (Appendix C) and a stamped return envelope. When this had been returned a cover letter and a copy of their consent letter and the PSNI were mailed out. This was followed by a telephone contact at which time an interview date was set. The method varied slightly for the control group in that following the initial telephone contact an introductory letter, PSNI, consent form and a demographic questionnaire were sent out. This questionnaire included a recruitment question requesting a face to face interview.

Interviews were conducted on campus or in the individual's home at the convenience of the participant. Interviews were recorded and than transcribed by trained medical transcriptionists with experience in maintaining confidential medical records.

Data Analysis

Demographic data were first reported descriptively and then served as independent variables in later data analysis. Data from the PSNI, with its demonstrated validity and reliability were analyzed using appropriate descriptive and inferential statistical analysis. Quantitative data from the interview were described and analyzed. As well qualitative data were analyzed using appropriate qualitative methods. The research questions addressed in this study and the analysis are outlined below:

Research question 1) Does perceived social support differ between students with disabilities and non-disabled students?

Independent variables: Disability status by self report.

Dependent variables:	Data source:
social support (total PSNI score)	PSNI
perceived network size	PSNI
relationship categories	PSNI
support initiation	PSNI
support availability	PSNI
support satisfaction	PSNI
support reciprocity	PSNI
network conflict	PSNI
network multi-dimensionality	PSNI

frequency of contacts	Interview
length of relationships	Interview
intensity of relationships	Interview
network density	Interview

The data were analyzed using descriptive statistics and t-tests or chi-square tests (where appropriate). Descriptive analysis provides a numeric summary of the data distribution while t-tests or chi-square tests were used to confirm the significance of any differences between group means. A significance level of .05 was adopted.

Research question 2) What are the relationships between the following independent variables, and the following multiple dependent variables? Dependent variables are total PSNI score and sub-scale scores.

Independent variables:	Data source:
disability status	self report
post-secondary education	self report
present place of residence	self report
geographic place of residence prior to university/college entrance	self report
age	self report
gender	self report

Dependent variables:	Data source:
social support (total PSNI score)	PSNI

support initiation	PSNI
support availability	PSNI
support satisfaction	PSNI
support reciprocity	PSNI
network conflict	PSNI
network multi-dimensionality	PSNI

The second question has been analyzed by Pearson's Correlation Coefficient. These were calculated for each of the independent variables using the PSNI scores as dependent variables (overall and sub-scale scores). An ANOVA was calculated to evaluate any interaction effect based upon gender and disability status.

Research question 3) What examples of social support and barriers to University access are described by these two groups of students and how does support relate to the process of overcoming these barriers?

The qualitative data were analyzed with this question in mind. Interviews were recorded and transcribed. Transcriptions were encoded to break down the data and then analyzed for significant themes. Themes were identified, according to theoretical areas of support as outlined by Tardy (1985).

Research question 4) What support needs are identified by both groups of students?

References to specific needs for support to overcome barriers to education have been noted. These will be discussed in relation to the subjects perception of the role of support in overcoming barriers and/or possible need for clinical interventions.

CHAPTER 4

RESULTS

The results of the study are presented under each of the research questions. Where appropriate, the initial analysis are presented in a tabular summary.

Research question 1) Does perceived social support differ between students with disabilities and non-disabled students?

The data are presented in a modified box and whisker plot format (Erickson and Nosanchuk, 1977). Outliers, or extreme values, have been identified, using a rule that data points, greater than 1.5 interquartile ranges lower than the lower quartile or higher than the upper quartile, are outliers.

Figures 4.1 to 4.9 summarize the social support variables for both groups. The results of a set of t-tests and Chi Square tests confirm no significant differences between groups on these variables, with the exception of the average number of professionals identified within the personal network.

Figures 4.8 and 4.9 summarize the average number of professionals, within personal networks, reported by the students. Group A has a range of professionals from 0.00 to 4.00 and an interquartile range from 0.00 to 2.00, while

Group B only has a few students reporting professionals within their networks.

Table 4.1 Perceived Support Network by group - t-test analysis

DEPENDENT VARIABLE	GROUP A MEAN	GROUP B MEAN	t-VALUE	PROBABILITY
PERCEIVED SUPPORT NETWORK INVENTORY TOTAL SCORE	28.82	29.64	-.44	.66
INITIATION (PSNI)	4.22	4.34	-.35	.73
AVAILABILITY (PSNI)	5.72	5.82	-.29	.77
SATISFACTION (PSNI)	5.74	5.63	.29	.77
MULTIDIMENSIONALITY (PSNI)	2.88	2.98	-.43	.67
RECIPROCITY (PSNI)	4.22	4.71	-1.30	.20
CONFLICT (PSNI)	5.91	6.09	-.50	.62
LENGTH OF RELATIONSHIPS	15.49	12.55	.89	.39
NETWORK DENSITY	.61	.71	-1.62	.11
RELATIONSHIP INTENSITY	5.16	5.28	-.31	.76
FREQUENCY OF NETWORK CONTACT	7.91	11.37	-1.49	.14
NETWORK SIZE (PSNI)	7.00	7.21	-.23	.82

Table 4.2 Network Composition

by group - t-test analysis

DEPENDENT VARIABLE	GROUP A MEAN	GROUP B MEAN	t-VALUE	PROBABILITY
FAMILY (PSNI)	2.27	2.76	-1.33	.19
FRIENDS (PSNI)	3.00	3.52	-.96	.34
COWORKERS (PSNI)	.00	.20	*	*
PROFESSIONALS (PSNI)	1.34	.20	3.75	.001
RELIGIOUS (PSNI)	.08	.05	.52	.61
SELF HELP GROUPS (PSNI)	.00	.00	*	*

* = t-test could not be calculated

Table 4.3 Marital Status

by group - Chi Square test

VARIABLES	GROUP A	GROUP B	CHI SQUARE (WITH YATES CORRECTION)	SIGNIFICANCE OF CHI SQUARE
SPOUSE	8	24	.07	.79
NO SPOUSE	18	42		

Figure 4.1 PSNI Scores by Group

GROUP	MEAN	MEDIAN	MINIMUM VALUE	EXTREME VALUES	MAXIMUM VALUE	LOWER QUARTILE	UPPER QUARTILE
A	28.82	31.05	25.30	.00,22.20	39.00	28.20	33.40
B	29.64	29.65	24.70	18.00	36.30	27.40	31.80

```
        BOX AND WHISKER GRAPH - TOTAL PSNI SCORE

        0---------5---------10--------15--------20--------25--------30--------35--------40

A       X                                           X     <-----[    *  ]---------->
B                                           X            <----[   *  ]-------->
```

X = Extreme Values   < = Minimum Value   > = Median Value   [= Lower Quartile   ] = Upper Quartile

Fig. 4.2 PSNI Subscale Scores - Group A

DEPENDENT VARIABLE	MEAN	MEDIAN	MINIMUM VALUE	EXTREME VALUES	MAXIMUM VALUE	LOWER QUARTILE	UPPER QUARTILE
INITIATION	4.22	4.25	2.00	.00	7.00	3.50	5.00
AVAILABILITY	5.72	6.30	4.40	.00	7.00	5.30	6.80
SATISFACTION	5.74	6.30	4.30	.00	7.00	5.70	6.70
RECIPROCITY	4.22	4.30	2.50	.00	7.00	3.30	5.40
CONFLICT	5.91	6.40	5.40	.00	7.00	6.00	6.80
MULTIDIMEN -SIONALITY	2.88	3.00	2.10	.00, 1.00	7.00	2.70	3.50

```
                    BOX AND WHISKER GRAPH

                    0---------1---------2---------3---------4---------5---------6---------7

INITIATION          X                   <--------------[       *      ]------------------->
AVAILABILITY        X                                           <--------[         *    ]->
SATISFACTION        X                                          <-------------[     *   ]-->
RECIPROCITY         X                        <-------[         *          ]--------------->
CONFLICT            X                                                     <-----[   *   ]->
MULTIDIMEN
-SIONALITY          X         X          <-----[  *    ]---------------------------------->
```

X = Extreme Value   < = Minimum Value   * = Median Value   > = Maximum Value

Fig. 4.3 PSNI Subscale Scores - Group B

DEPENDENT VARIABLE	MEAN	MEDIAN	MINIMUM VALUE	EXTREME VALUES	MAXIMUM VALUE	LOWER QUARTILE	UPPER QUARTILE
INITIATION	4.34	4.20	3.20	-----	7.00	3.70	4.80
AVAILABILITY	5.82	5.80	3.00	-----	7.00	5.50	6.00
SATISFACTION	5.64	5.70	4.40	3.00	7.00	5.00	6.00
RECIPROCITY	4.71	4.75	2.70	-----	7.00	3.70	5.4
CONFLICT	6.09	6.20	4.8	2.00,4.10	7.00	5.80	6.60
MULTIDIMEN-SIONALITY	3.00	2.90	1.00	1.40	4.60	2.60	3.40

```
                    BOX AND WHISKER GRAPH

                    0---------1---------2---------3---------4---------5---------6---------7

INITIATION                                          <----[    *     ]--------------------->
AVAILABILITY                                      <------------------------[  * ]--------->
SATISFACTION                                      X             <-----[      *  ]--------->
RECIPROCITY                                  <---------[         *      ]--------------->
CONFLICT                                X                    X      <---------[   *   ]--->
MULTIDIMEN
-SIONALITY                        X   <-------[  *    ]----------->
```

X = Extreme Values < = Minimum Values * = Median Value > = Maximum Value

Fig. 4.4 Length of Relationships (durability in years) by group

GROUP	MEAN	MEDIAN	MINIMUM VALUE	EXTREME VALUES	MAXIMUM VALUE	LOWER QUARTILE	UPPER QUARTILE
A	15.49	13.20	0.00	55.00,45.00 26.60	21.30	9.20	14.80
B	12.55	12.75	5.50	----------	21.00	9.30	14.90

```
        BOX AND WHISKER GRAPH
        0---------10--------20--------30--------40--------50--------60--------70

A       <--------[   *]------>    X                  X         X
B            <---[  *  ]----->
```

X = Extreme Values < = Minimum Value * = Median Value > = Maximum Value

[= Lower Quartile] = Upper Quartile

Fig. 4.5 Network Density by group

GROUP	MEAN	MEDIAN	MINIMUM VALUE	EXTREME VALUES	MAXIMUM VALUE	LOWER QUARTILE	UPPER QUARTILE
A	0.81	0.60	0.00	--------	1.00	0.40	0.80
B	0.71	0.70	0.40	--------	1.00	0.60	0.90

```
        BOX AND WHISKER GRAPH
        0----.1----.2----.3----.4----.5----.6----.7----.8----.9----1.0

A       <----------------------[           *           ]----------->
B                              <-----------[     *           ]----->
```

X = Extreme Values < = Minimum Value * = Median Value > = Maximum Value

[= Lower Quartile] = Upper Quartile

Fig. 4.6 Intensity of Relationships by group

GROUP	MEAN	MEDIAN	MINIMUM VALUE	EXTREME VALUES	MAXIMUM VALUE	LOWER QUARTILE	UPPER QUARTILE
A	5.16	5.50	3.60	0.00	7.00	4.95	7.00
B	5.28	5.30	4.00	----	6.80	4.70	5.65

```
        BOX AND WHISKER GRAPH
        0---------1---------2---------3---------4---------5---------6---------7

A       X                                  <-------------[     *    ]--------->
B                                               <------[     *  ]----------->
```

X = Extreme Values   < = Minimum Value   * = Median Value   > = Maximum Value

[= Lower Quartile   ] = Upper Quartile

Fig 4.7 Frequency of Contacts by group

GROUP	MEAN	MEDIAN	MINIMUM VALUE	EXTREME VALUES	MAXIMUM VALUE	LOWER QUARTILE	UPPER QUARTILE
A	7.91	7.00	0.00	30.00	15.60	1.00	10.90
B	11.37	10.40	1.60	-----	24.40	5.30	18.75

```
        BOX AND WHISKER GRAPH
        0---------5---------10--------15--------20--------25--------30--------35

A       <-[          *        ]-------->                            X
B          <------[          *                ]---------->
```

X = Extreme Values   < = Minimum Value   * = Median Value   > = Maximum Value

[= Lower Quartile   ] = Upper Quartile

Fig. 4.8 PSNI Network Size and Relationship Types - Group A

DEPENDENT VARIABLE	MEAN	MEDIAN	MINIMUM VALUE	EXTREME VALUES	MAXIMUM VALUE	LOWER QUARTILE	UPPER QUARTILE
NETWORK SIZE	7.00	7.50	.00	-----	12.00	4.00	11.00
FAMILY	2.27	2.00	.00	-----	6.00	1.00	4.00
FRIENDS	3.00	3.00	.00	-----	8.00	1.00	4.00
CO-WORKERS	.00	.00	.00	-----	.00	.00	.00
PROFESSIONALS	1.35	1.00	.00	6.00	4.00	.00	2.00
RELIGIOUS	.08	.00	.00	1.00	.00	.00	.00

```
               BOX AND WHISKER GRAPH - NUMBER OF PEOPLE
               0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10----11----12

NETWORK
SIZE           <-----------------------[                    *                    ]----->
FAMILY         <-----[     *           ]----------->
FRIENDS        <-----[           *     ]----------------------->
CO-WORKERS     *
PROFESSIONALS  <     *     ]----------->           X
RELIGIOUS      *     X
```

X = Extreme Values   < = Minimum Value   * = Median Value   > = Maximum Value

[= Lower Quartile   ] = Upper Quartile

Fig. 4.9 PSNI Network Size and Relationship Types - Group A

DEPENDENT VARIABLE	MEAN	MEDIAN	MINIMUM VALUE	EXTREME VALUES	MAXIMUM VALUE	LOWER QUARTILE	UPPER QUARTILE
NETWORK SIZE	7.21	7.00	2.00	-----	12.00	5.00	9.00
FAMILY	2.76	3.00	.00	-----	6.00	2.00	4.00
FRIENDS	3.52	3.00	.00	-----	9.00	2.00	4.00
COWORKERS	.20	.00	.00	1.00,2.00	2.00	.00	.00
PROFESSIONALS	.00	.00	.00	1.00, 2.00,3.00	.00	.00	.00
RELIGIOUS	.05	.00	.00	1.00	.00	.00	.00

```
                BOX AND WHISKER GRAPH - NUMBER OF PEOPLE
                0-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10----11----12

NETWORK SIZE                <-----------------[           *           ]----------------->
FAMILY          <-----------[     *     ]----------->
FRIENDS         <-----------[     *     ]----------------------------->
COWORKERS       *     X     X
PROFESSIONALS   *     X     X     X
RELIGIOUS       *     X
```

X = Extreme Values < = Minimum Value * = Median Value > = Maximum Value

[= Lower Quartile] = Upper Quartile

Research question 2) What are the relationships between the following independent variables; (disability status, years of post secondary education, present place of residence and place of residence prior to university entrance) and the following multiple dependent variables; (social support from PSNI, total score and network size, support initiation, support availability, conflict and network multidimensionality from PSNI subscale scores)?

The initial analysis with Pearson's Correlation Coefficient is summarized in Figure 4.13. Of the independent variables only gender and age had significant relationships. Gender was significantly correlated with initiation, availability, satisfaction, reciprocity conflict and overall PSNI score while age was correlated with initiation, satisfaction, reciprocity and network size. Female students consistently reported stronger social supports than males.

In order to assess any possible interaction effects between gender, disability status, and social support, a two-way analysis of variance was conducted. See Tables 4.5 for a summary of ANOVA results. Initially the homogeneity of variance was not adequate to calculate the ANOVA. In order to improve the homogeneity, the two extreme values within Group A were removed. The ANOVA, calculated on this smaller group, confirmed that there are no significant differences between groups. However, it does indicate significant difference between male and female students. Furthermore, a two-way interaction effect is demonstrated between gender and disability. Women overall reported higher PSNI scores, and Group A females reported more social support than the Group B females. Conversely, the Group A males reported lower PSNI scores than the males in Group B. A Schéffe Test was calculated comparing the cell means of these four groups and two of the relationships were significant at the .05 level. These were between Group A males and both groups of females.

Age was also correlated with a number of sub-elements of social support. It was decided not to include age in further analysis as it was not significantly correlated with overall PSNI score and the other significant correlations were not very strong. Age was one of the independent variables that was not similarly represented in the two groups nor were all ages well represented. In order to compare groups, age would have needed to be dichotomised arbitrarily. All of these factors were considered in the decision not to use age for further analysis.

Table 4.4 SOCIAL SUPPORT

Pearsons correlation coefficient - pooled data

	SOCIAL SUPPORT DEPENDENT VARIABLES							
INDEPENDENT VARIABLES	PSNI TOTAL	INITIATION	AVAILABILITY	SATISFACTION	MULTI-DIMENSIONALITY	RECIPROCITY	CONFLICT	NETWORK SIZE
CASE/CONTROL	.07 P=.53	.05 P=.64	.04 P=.69	-.04 P=.69	.06 P=.60	.16 P=.12	.07 P=.50	.03 P=.79
MARITAL	-.15 P=.16	-.07 P=.52	-.10 P=.34	-.11 P=.30	-.04 P=.69	-.13 P=.21	-.13 P=.21	-.05 P=.61
GENDER	.36 P=.000	.36 P=.000	.25 P=.02	.23 P=.03	.15 P=.16	.35 P=.001	.30 P=.004	.19 P=.07
RESIDENCE	.03 P=.80	-.01 P=.96	.05 P=.62	.03 P=.78	.07 P=.51	.02 P=.84	-.08 P=.44	.06 P=.60
PRIOR RESIDENCE	-.03 P=.80	-.02 P=.87	-.03 P=.78	-.11 P=.29	.08 P=.43	.12 P=.25	-.10 P=.36	-.04 P=.71
POST-SECONDARY EDUCATION	.06 P=.55	-.03 P=.76	.07 P=.54	.13 P=.23	.17 P=.11	-.05 P=.67	.12 P=.26	.15 P=.14
AGE	.18 P=.09	.21 P=.04	.11 P=.32	.21 P=.05	.01 P=.96	.21 P=.04	.09 P=.40	-.22 P=.04

Table 4.5 PSNI by Group and Gender

- ANOVA

SOURCE	D.F	S.S	M.S	F	P
BETWEEN GROUPS	3	541.80	180.60	6.87	.0003
WITH/IN GROUPS	88	2313.78	26.29		
TOTAL	91	2855.57			

Research question 3) What examples of social support and barriers to university access are described by these two groups of students and how does support relate to the process of overcoming these barriers?

The third research question was investigated through a semi-structured interview with 24 of the twenty-five Group A students and 20 of the Group B students. The results of these interviews were analyzed using a qualitative content analysis based upon Tardy's (1985) areas of support: emotional, instrumental, informational and appraisal. As well as social support, the content analysis includes barriers to university/college education and the activity context in which social support has been exchanged.

Within these major categories of support a number of themes emerged. These are discussed as they pertain to the experiences of the entire interview sample, as well, themes that emerged regarding a group or individual are discussed further. Features of support that emerged are presented as they relate to each of the sample groups.

It is understood that a qualitative methodology does not lend itself to any comparison of groups. Rather than attempting to make any grand comparisons of differences, this report describes more global themes including divergent themes within groups, always with the intention of describing the students' experiences of social support. Descriptions of the themes that emerged from the analysis and examples from the interviews are found in Tables 4.4 to 4.13. Examples were chosen for their usefulness in representing and developing the themes themselves.

The activity context in which social support is provided proved to be a significant theme within the interviews. The students described widely varying daily routines; the primary activity themes that developed within the interviews were as follows:

1. Socialization/conversation/visiting.
2. Sport/health/fitness.
3. Travel.
4. Education.
5. Stressful events.
6. Entertainment/movies/going out.
7. Shopping.
8. Eating/drinking.

Although the interview specifically directed questions at mutual activities, this was usually not necessary as students often voluntarily provided details of social interaction within an activity context. One difficult theme to categorize was the theme of conversation. In some instances this clearly had an activity context such as "then I'll go home and talk to my Mom and brother..." or "just talking and have supper at their place..." while at other times it was more clearly the actual supportive exchange. For example, "She would help me by listening. By again giving me information." As will be discussed further, most emotionally supportive interactions involved verbal exchange with the exception of physical sorts of comfort such as hugs or simple contact such as "She is there for me." This study does not attempt to discuss the significance of any activity and the social support relationship. Rather, the possible relationship between activity and social support is presented as an area for further research of particular relevance to occupational therapists.

Within the content analysis a number of themes and sub-themes arose relating to emotional support. These are as follows:

Comfort - physical comfort
- comforting activity
- verbal comfort/affirmation
- humour/cheering up

Care and Concern - understanding/knowing
- love
- support/encouragement

Communication - listening
- questioning/clarifying
- sharing experiences/discussion

Examples of the emotional support content analysis and the definitions of themes and sub-themes are presented in Tables 4.4 and 4.5.

In general the two groups are quite similar in their descriptions of emotional support. Comfort appears to be similar in all sub-themes, however, Group A has a number of references to physical comfort with a notable feature. That is, that they include specific mention of activities related to dealing with disability or pain. This includes such activities as back rubs, massages, and back manipulations specific to pain. It is possible that these are a unique feature that holds special importance for some students with disabilities.

In the care and concern theme there is also a general similarity between groups but, there appears to be a set of themes that specifically relate to students with disabilities. Group A reports a number of features that have been included under the sub-theme of understanding/knowing. Themes such as the significance of the common experience shared by people with disabilities, as well as the importance of knowledge about disability emerged during the content analysis. The "love" theme is also notable in that this experience was only mentioned by four students in Group A.

The final care and concern divergent theme is a support theme expressed by four students, it refers to the protectiveness of their siblings and parents. This also was not seen in the Group B interviews.

The theme of conversation seems to be remarkably similar between the two groups. As might be imagined the typical content of these supportive conversations often has a disability theme for the Group A students.

Instrumental support is the second of Tardy's (1985) Social Support content areas. Instrumental supports are tangible supports such as physical aid, monetary assistance or the provision of goods or services. A number of types of instrumental supports, used by students, were identified in this study:

- Loans/gifts
    - money
    - food
    - housing
    - clothing
- Transportation
- Repairs/renovations
- Child care
- Assistance with self-care/domestic management
- Assistance with leisure pursuits
- Assistance with school
- Assistance to overcome physical barriers
- Adaptations for special needs
    - equipment/technology
    - scheduling/process

See Figures 4.6 and 4.7 for summaries of instrumental analysis and definitions of each of the themes. This again was a content are in which similarities and differences exist.

Both groups discussed instrumental supports such as loans/gifts, transportation, repairs or renovations or child care. Themes such as assistance with self-care/domestic management, assistance with leisure pursuits, assistance with school, assistance to overcome physical barriers, equipment for special needs and adaptation to schedule to accommodate special needs appeared largely within the Group A interviews, and often are closely associated to discussions of disability related barriers to post-secondary education.

The third of Tardy's (1985) content areas is informational support. Within this category a number of informational topics arose:

- Education
- Money management/career
- Relationships
- Decision-making
- Adaptations for special needs
- Medical professionals
- Non-medical professionals

See Table 4.8 and 4.9 for examples of the informational content analysis and a definition of each of the themes.

Again there appear to be a number of topics that are shared by both groups and a set of topics more typically related to Group A. Examples of shared topics of information are: post-secondary education, money management/career, medical professionals, relationships, decision-making. As well there were a number of unique topics of informational support identified by individuals but not supported by others such as health, car repairs, spirituality, music, politics, safety and home care. The issues unique to Group A were as follows: adaptations for special needs such as parking, and a broader category of professional support including physical therapy, psychology/counselling, pharmacy, physical education and occupational therapy. These are in keeping with the network analysis in which Group A reported a much higher inclusion of professionals within their social networks.

Informational support was seen as important. Like emotional support it is predominantly provided through verbal interactions. Of particular interest were references by students to the importance of receiving information as to the ways in which to function at university/college. This included references specific to understanding the bureaucracy as well as topics specific to Group A regarding adaptations and supports available to overcome physical barriers for students with disabilities. This sort of information was provided by support services at university/college such as the Registrar's Office or Disabled Students' Services. As well there were a number of references to the appeal of information on decision-making regarding academic program or managing stress.

The fourth of Tardy's (1985) content areas is appraisal support or feedback regarding performance. In some ways this area of support appears to be closely connected to emotional support. In this study, appraisal support has been coded as specific examples of statements that provide feedback on an individual's performance. Originally appraisal was broken down into four themes: positive and negative feedback, affirmation, encouragement and humour. Affirmation and humour were both found to be more closely related to verbal comfort, and encouragement to the support sub-theme of care and concern. Thus, appraisal was seen to be a theme with that divided into positive feedback and negative feedback. Table 4.10 and 4.11 summarize appraisal support analysis and the definition of these two themes.

Generally, it is interesting that this theme is one of the smaller themes. Many students do not specifically describe direct incidents of feedback. Positive feedback included general positive statements such as "you are strong" or specific statements such as "he would remind me to look at the things that were good about myself".

Negative feedback tended to be more mixed in that some statements that appeared to be encouraging actually were negative feedback about performance such as "maybe you're pushing yourself too hard", while other statements were directly negative "she's always the one who will (say), I shouldn't be doing so much...". Both groups describe positive feedback similarly, however Group A has the larger volume of negatively stated feedback.

The second half of the analysis of the third research question is a description of the barriers faced by university/college students. The first feature of this barriers analysis was the fact that Group A students described dramatically more barrier related content than Group B. The themes that emerged are as follows:

- Behaviour/attitudes of others
  - negative stereotypes
  - lack of family support
  - unwillingness to provide support
  - rudeness
  - unrequested assistance
  - difficulty communicating with professor
- Accessibility/adaptability
  - architectural barriers
  - crowded hallways
  - campus size
  - snow removal
  - lack of, or inappropriate adaptations
  - difficulty with transportation

- Money
- Individual needs/limitations
    - stress re: time
    - stress re: differences in age
    - stress re: dual role
    - study skills
    - stress re: volume of academic work
    - emotional state
    - physical limitations
    - pain/fatigue
    - cognitive limitations
    - social isolation
    - lack of social contacts
- Inadequate child care

See Table 4.12 and 4.13 for examples of barrier content analysis and theme definitions.

The first theme, behaviour or attitudes of others is a common theme. It includes such sub-themes as negative stereotypes, lack of family support, others not willing to provide assistance, rudeness, unrequested assistance and difficulty communicating needs to professors. In general these were themes primarily expressed by Group A students.

Some Group B students also report specific examples of behaviour/attitude or other barrier themes. The two sub-themes that are described by Group B students are lack of family support and difficulty communicating needs to professors.

As well, the role of support in dealing with behavioral or attitudinal barriers varied. Most students did not report using social support to cope with this specific variable, but rather some internal approach. One subject described receiving support from her sister regarding the attitudes of others. Another exception to this is two women who describe ex-husbands as unsupportive. These women both relate receiving support from their children to overcome their husbands' negative attitudes.

The second theme is that of accessibility or adaptability of the university as an institution. The themes described are architectural barriers, campus size and number of people, snow removal, lack of or inappropriate adaptations for special needs, schedule does not accommodate special needs and transportation to university. Again this is largely represented in the Group A interviews.

Group B concerns that appear to relate to this area are specific to the size of the campus or of classes. This is not a dominant theme within the Group A data. However a similar theme shared by both groups relates to difficulty getting from one point to another across campus.

Social support was more commonly seen in this theme as a good way of overcoming barriers. Group A students often mentioned the importance of DSS in overcoming this sort of barrier. Others preferred to ask for assistance from family or peers. In general, it appears that support has played an important role in overcoming some types of barriers that exist while internal resources are more significant in overcoming other barriers.

Accessibility continues to be a limiting factor for students with mobility difficulties. This theme was repeated constantly. It is important to recall Burbach and Babbitt's (1988) finding that even when environments are appropriate, getting from class to class is still difficult. University of Alberta students with disabilities describe similar experiences. As well, it was clear that a number of buildings are not easily accessible. The University has demonstrated flexibility in this regard, for example one subject was successful in having a class moved, for accessibility reasons. However, this continues to be an area of limitation. One factor that received a great deal of attention was the perception that snow removal is actually an increasing problem. A number of students referred to this issue. As well, one student expressed concern about the iciness of sidewalks which, for her, a limited walker, posed a serious barrier to mobility. As well she commented on that entrances were often modified to accommodate wheelchairs which did not necessarily meet her needs.

The third theme within the barriers analysis is the need for personal finances/money. This was reported by both groups. It was not a dominant theme for either group.

The fourth theme seems to relate to barriers that are primarily related to limitations of the individual. These include issues specific to Group A such as physical limitations, pain or cognitive limitations or more general, emotional or stress related factors. As well, a number of the barriers faced by students with disabilities related to environments away from the university. Examples of this relate to ADL, home management, community access and leisure pursuits. Group B students also describe a wide range of individual variables that are stressors or make university more difficult. Again these personal barriers often are described as being coped with through the use of supports.

Table 4.6 Emotional Support Themes - Definitions and Excerpts From Group A Interviews

Physical Comfort: This refers to physical contact that has an emotionally comforting quality for the recipient.

Comforting Activity: This refers to activities that are intended to provide emotional support to the recipient.

Verbal Comfort/Affirmation: This refers to verbal messages that are intended to provide emotional support or affirm the feelings of the recipient.

Humour/Cheering Up: This refers to exchanges of humour that are perceived to be emotionally supportive by the recipient.

Understanding/Knowing: This refers to instances where recipients refer to some feeling that relationships are supportive due to how well the subject is known or understood. This also refers to mentions of closeness.

Love: This refers to specific instances where the word love was used to describe an interaction.

Support/Encouragement: This refers to specific instances where the words support or encouragement were used to describe an interaction.

Listening: This refers to instances where emotional support is communicated by the recipient feeling listened to.

Questioning/Clarifying: This refers to instances where emotional support is communicated with questions and/or process of clarifying stressful issues.

Sharing Experiences/Discussion: This refers to instances where emotional support is communicated with reciprocal sharing of experiences or discussion.

Sharing Experiences/ Discussion	Well school-wise, when I was just talking about attitudes of people, she was there some of the time so she saw this and we would talk about how, if she thought I was under-reacting or over-reacting to the way people were or whatever.

Love Physical Comfort	Well she just loves me, she hugs me and gives me a kiss.
Physical Comfort Understanding/ Knowing	Massage, hey xxxx crack my back. It's killing me. You know that sort of thing. Or stretch or something like that. I consider that also to fall in the realm of people I consider are going react more or less normally if I say "hey I gotta lie on the floor while we are talking", sorry or I do that a lot and you know I wouldn't do it at university for example but I would do it with my friends or something.
Questions/ Clarifying	I'ld go across the bridge to where he works and I would jump into his car and he would say "so how was your day" and he would talk to me....
Understanding/ Knowing	Oh, from being ill you know, I'll call her and tell her and she knows I'm ill. She doesn't know I'm putting it on or say, well don't you think it's time you were better or, she can sympathize with you without being overly sympathetic.
Understanding/ Knowing Sharing Experiences/ Discussion	I could rate other people in terms of a different light but I have more in common with this particular person in this respect. He's an injured individual as well so we gripe about the Board or injured or bummed out.
Listening Understanding/ Knowing	Um, just he's there to listen all the time. He knows that I have high expectations of myself and kind of makes me relax, you know don't worry about it, just do it one day at a time.

Understanding/ Knowing Listening	She herself is disabled so if I'm frustrated about something she can understand or if I'm frustrated with my family, I know I can go to her and talk to her about those things, she will give me advice and she will just let me get out all my...
Listening Humour/ Cheering Up	Again, she listens to my problems if I have any or just if I'm down, she'll try and cheer me up.
Listening Comforting Activity	By being a sounding board I suppose. She doesn't have the technical education that I've got but I might be struggling with some particularly assignment and after a certain amount of time a certain amount of frustration going on, this darn thing just doesn't work. Oh, well why don't you have a cup of tea. Put that one aside and try another one for a while.
Verbal Comfort/ Affirmation Support/ Encouragement	Ya, xxxx xxxx was very helpful when that member of my family died. She was just, it was very difficult circumstance because it was a suicide and she basically, everybody feels a sort of guilt in that sort of situation and she was basically just telling me that it really had nothing to do with me. She just helped me get through that.
Physical Comfort Comforting Activity	Um, well same as my Mom, she, you know give me a hug, bake me something that I liked or stuff like that.

Table 4.7 Emotional Support Themes - Excerpts From Group B Interviews

Verbal Comfort/Affirmation	Um, he's another one I talk to about school. Like I call him up if I'm having problems with a paper or something. He won't give me concrete you know how to do this but it's more like "Oh God xxxxx I'm so stupid, I can't get this" and like "no, your not". So he's more of a, I guess raises my self-esteem and stuff like that. Because I'm always the one going "Oh God I can't do this, I can't do this" and he's "I know you can" so that's where I get advice from. You know just telling me that I can do it. Even though I'm in tears he will tell me I can do it.
Understanding/ Knowing Questioning/ Clarifying Comforting Activities	Um, because like emotional, I don't know, just for the fact that I know she is interested in my day and stuff and it's like kind of, I don't know it makes me feel like someone is actually interested in my day. No matter how boring it is so when I come home she like "how was your day" and everything and when I'm writing these papers um, she'll always like, you know if I really having a rotten day writing my paper, she'll say "oh, is there anything you want special for dinner, you want me to make you" or something and I'm usually like ya.
Humour/ Cheering Up Physical Comfort	Well, if I have had a bad day he will give me a hug or make me laugh, crack jokes.
Support/ Encouragement Listening	He's very encouraging in that he'll listen to and then try and boost your confidence if you are feeling depressed or whatever and I seem to say that word a lot don't I. No, I'm not a depressed person really. But he will listen and try and support me and encourage me and give me all the confidence that he can.

Listening Understanding/ Knowing	She is another person who likes to listen and I've trusted her for so many years I think she's the one that I trust the most of all my friends. She's just been there all the time when I've needed her.
Verbal Comfort Physical Comfort	Um, he always give me advice or try to soothe me whenever I am angry or in trouble or whatever. He hugs me and he talks to me slowly and tell me not to, this and this and that. Like if it's not that bad, you know, things going to clear up soon and try to find a way out for me.
Listening Verbal Comfort Sharing Experiences/ Discussion	Well basically he's a listener and we got to the point we could dump out what really retches us and he'll sit there and ya, I understand and things like that and again, one time when we met and became friends through a crises, that we have learned, he's the closest that I could say that I could dump feelings on and get feelings dumped back and he's really good.
Questioning/ Clarifying	She's always wondering about my state of emotional health so she's more than willing to give help that way. She's very curious, nagging actually about things that are going on in my life so she would, she would enquire about what I am doing, how I am feeling and whatever.

Table 4.8 Instrumental Support Themes - Definitions and Excerpts From Group A Interviews

Loans/Gifts: This refers to the provision of tangible things such as money, food, housing or clothing.

Transportation: This refers to the provision of transportation services or adaptations to accommodate transportation.

Repairs/Renovations: This refers to the provision of services such as repairs or renovations to housing or equipment.

Child Care: This refers to the provision of child care services or assistance in arranging child care.

Self-Care/Domestic Management: This refers to tangible supports with personal hygiene, dressing, eating, cooking, cleaning, shopping, banking.

Leisure Pursuits: This refers to tangible support to participation in leisure activities as well as to access community leisure facilities.

School: This refers to tangible supports to participate in college/university education.

Physical Barriers: This refers to tangible supports specific to overcoming physical barriers.

Adaptations: This refers to tangible supports specific to accommodate special needs in the form of equipment technology or scheduling/process.

Self Care/Domestic Management	Well when I go to bed at night and when I get up, well I can't get up, I should say all the time, sometimes I he helps me.
Leisure Pursuits	Actually we have a group of us, we have a trainer and a group of disabled persons and he sets up a program, helps us in the weight room and stuff like that.

Physical Barriers School Adaptations	Um, not usually. I talk to a few people who are in my classes. But not usually that many people that I would stop and talk to unless I need help or something. Like some of the time, especially in the winter time if, with classes at 8:00 in the morning I have to be there before 8:00 and the graders haven't come there early so a few times I have had to get people to help me through the snow so.
School Adaptations	Actually if I think about it um, on the days that I have labs, lab would be more difficult for me, hand function-wise and my level of injury is higher so I do meet with the people in my lab some of the time to, if we have work to do. [So if you had a dissection, how would those dissections, or how would you get through that?] Actually in most of my labs I just observe, either watch one person do it or a pair of people do it. It's harder I think, especially zoology ones, dissection-wise, like they have to be doing stuff underneath the microscope and of course I can't be looking through there while they are doing it so it's kind of like a second hand kind of thing and I don't really get as much from it, especially in chemistry.
Transportation Self-Care/ Domestic Management	She's the kind of person you can phone up and say if the trucks not working for example, "Can you give me a ride" and she will give me a ride or "I'm not able to get around today. Can you help me out".
Loans/Gifts	He gives me money if I need it. He pays for school and everything.

Transportation	I'm really grateful. I'm grateful that I can, first that of that I can drive here and park here because parking is absolutely.... they don't, you know parking is extremely restricted so I am grateful for that because it would be tougher bussing it down and so forth and like I say I didn't, I don't know how I would feel but just from what I have suffered, I thought I could be in a bind standing waiting for a bus and I have known busses to be.
Self-Care/ Domestic	I get in myself, wash my hair and stuff like that. Getting out is when I need someone to help, Dad or my brother usually gives me help. Or my friends, depends whose there.
Self-Care/ Domestic	Sometimes with my hair. [Who would do your hair?] My girlfriend.
Repairs/ Renovations Transportation	My parents have been really great in getting, in helping me and stuff. My dad builds me a lot of thing, like bookstand so I can read and have it in front of the book case and shelving for books and stuff so I can have all my stuff ..... He's been great with that. And then getting me around too.
School Self-Care/ Domestic Management, Adaptations	He carries my books, he carries my meal tray when we go to the cafeteria together. Basically anything that he thinks he can get away with doing for me he will.
School Adaptations	They will get books for me. If I'm not able to reach books because of my height they will find books for me. They will search out books. If I need help for xeroxing they will help me. Usually I do all my own xeroxing but I will not go to Cameron to pick up books so they will do that for me.

Self-Care/ Domestic Management School	For me, I need, when I go to the washroom, a raised toilet seat and I got one put in a washroom at the university when I first went for my degree, but last year I was away for about three weeks with a broken shoulder and I had this one washroom that I always go to and I came back and they had taken the seat away. So I had to phone Services for Disabled Students and had them track it down for 13 hours so that I find frustrating in terms of...
School Physical Barriers	Well, I'm finding it very frustrating that they are not shovelling the sidewalks. I mean before Christmas I phone the Student Services and I got someone on it but since that time, they still haven't, like today I went and it was just like going through a snow bank, I mean it's a good thing I'm a small person, if I was in an electric chair or a bigger person I don't know how the drivers would manage.

Table 4.9 Instrumental Support Themes - Excerpts From Group B Interviews

Loans/Gifts	She's loaned me money on I don't know how many occasions. She'll always lend me money. She will always lend it without a question.
Self-Care/ Domestic Management	Well when she was here it was like, cooking, stuff like that. Helping around the house, doing some chores or whatever.
Transportation	Ya, same thing. You know, when I fly to Ontario he's the guy who picks me up at the airport and things like that.
Child Care	Ya, she flew out to babysit for us in November so she came out to do that for us. She is going to be taking the children this summer for a couple of weeks which I suppose you could consider physical. It's like a holiday for them but it's help for us.
Self-Care/ Domestic Management	She has offered to store my furniture for me if I have to move and don't have a place to stay yet.
Self-Care/ Domestic Management	Ya, she cooks supper and when my Dad's home too.
Loans/Gifts	For example, money and well he provides, since he is the provider, and then my Mom, I guess they did pay for my tuition here and I do have my own room to study in and my own private desk in which I can go and study and I consider that material support.
Repairs/ Renovations	He does all the handy work.

Table 4.10 Informational Support Themes - Definitions and Excerpts From Group A Students

Education: This refers to information or advice provided that is specific to university/college education.

Money Management/Career: This refers to information or advice provided that is specific to banking, budgeting, investment and job search.

Relationships: This refers to advice or information provided regarding family and friends, or other significant relationships.

Decision Making: This refers to advice on information that supports the individual in making decisions.

Adaptations: This refers to advice or information provided regarding adaptations for special needs.

Professional: This refers to information or advice provided by a professional.

Education	Just being there for me, he can help me with some of the math struggles that I've had.
Relationships	Let me see. When I had, when I was going out with this boyfriend I had, she was a big help then. You know we were having problems and stuff. [How would she be a help for you.] Actually she was the one to push me to break up with him. It was just like, he's good for nothing, rotten, dirty, you know...
Money Management/ Career Decision Making	Actually she pretty good money-wise. I tend to want to spend things on frivolous things. Actually she came with me to Dinwoody's, it's an art sale they have there. Actually I wanted, I phoned her from the lab today and told her to come and meet me there, because I knew if I went there I would have spent so much money....

Education Adaptations	Ya, having gone through school, the U of A, she came and she has had some tidbits here and there, perhaps where I could go to find something out or ways of doing things different. Cutting through buildings instead of walking around.
Money Management/ Career Professional	She has helped like when I'm trying to get a job and she has helped tell me what kind of a resume to put together. She is helpful if, you know, I want to go skiing but I shouldn't be skiing. She's helpful in that in telling me what kind of things I shouldn't do.
Professional	No, I don't anybody to help me get ready in the morning. I actually have an occupational therapist every weekday. They've got ways to make it easier for me to get ready in the morning, ... things, on my own. There are just ways, you know, I usually can't wash my hair with out a lot of difficulty, so I have got ways to wash my hair, you know, things like that.
Decision Making	Usually what to wear. Stuff like that. Always when I'm going out there to be careful. Mom stuff.

Table 4.11 Informational Support Themes - Excerpts From Group B Interviews

Money Management/ Career	Ya, and I worked in Jasper last summer and she is from Jasper and so I was asking her what kinds of jobs should I try and get down there...
Relationships	She's the one I usually go to if I'm having problems with friends even just kind, because she's had the same kind of problems and stuff and so she would be the one, she will give me advice on that, you know just listen to me.
Relationships	He phoned on the weekend and my grandfather had a stroke so he phones. Stuff like that, things of that nature I suppose.
Decision Making	I can remember the time when he didn't want me to get a motorcycle....so he brought back all these photographs of people in motorcycle accidents....
Relationships Money Management/ Career	Usually concerning men. But also just I guess, career-wise too in a way and just from her experience you know this is what has worked for her and so maybe this will work for you kind of thing in just general life things I guess.
Education	Well just for school. He'll try to give me advice, help study, and what courses to take and that sort of thing.

Relationships	Well, she's gone through. Well she is teaching right now so the emotional support was, especially, I would take genetics, and I was just having a rotten time so it was like make it through and it will be alright like, just learn the basics and don't get really into it otherwise you are going to lose it. Everything will pile up on you. You don't want that. And then when she was here, talking about my Mom. So we got together about that. It was like, I can't believe that Mom did this and Mom did that. Well maybe she going through this right now, because she's closer to home right now and find out things like that and any time I'm down I can call her and say. It's like sister and brother
Money Management/ Career Education Decision Making	I remember in high school when I didn't want to go to university or consider post-secondary education and he would come and talk to me and tell me how important it is to get an education and that to become someone of status in society that you have to have a good paying job and therefore to work harder now and don't have to work as hard when you are older.
Relationships	Advice on how like since my parents are old fashioned, that maybe I should, and since I'm being more modernized, in terms of my beliefs and their pretty rigid with theirs, she sort of tells me that there's a lack of understanding and that you should, since you have more understanding, and since you are growing up in a modern age that you should be able to understand things that they are going because of the differences in culture and the way they were brought up were different and now I am being brought up in a totally different way, I have to sort of see a communication link between us.

Table 4.12 Appraisal Support Themes - Definitions and Excerpts From Group A Interviews

Positive Feedback: This refers to a verbal exchange that provides positive feedback regarding performance.

Negative Feedback: This refers to a verbal exchange that provides negative feedback regarding performance.

Positive Feedback	Um, she forced, she coerced me into applying for the general diploma and when I didn't want to do anything...... scared or alone, she uplifts me if anybody can.
Positive Feedback	emotional support, encouraging me to go to university and that I was strong enough to do it and that kind of stuff.
Negative Feedback	I do side stroke because of my back, but I can do sidestroke as fast as a lot of people can do a front crawl so I figure it's legitimate for me to be in this lane. It doesn't say no side stroke in this lane, it says, you know a certain designation, in terms of speed so I was swimming along there and boy that fellow started coming at the same time as me, I think he just had that in his schedule. And I changed mine. I didn't think it was worth the conflict.
Negative Feedback	.... Maybe you're pushing yourself too hard and what have you.

Table 4.13 Appraisal Support Themes - Excerpts From Group B Interviews.

Positive Feedback	Um, he's another one I talk to about school. Like I call him up if I'm having problems with a paper or something. He won't give me concrete you know how to do this but it's more like "Oh God xxxxx I'm so stupid, I can't get this" and like "no, your not". So he's more of a, I guess raises my self-esteem and stuff like that. Because I'm always the one going "Oh God I can't do this, I can't do this" and he's "I know you can" so that's where I get advice from. You know just telling me that I can do it. Even though I'm in tears he will tell me I can do it.
Positive Feedback	My Mom is more like for advice, just telling me "don't stress out, it'll be okay, you can do it sort of thing". I'll always, like everytime I'm doing a paper I'm always questioning myself. Like why can't I do this. It's like "you can, your just, settle down, have a cry if it makes you feel better but just settle down". She gives me that advice.
Positive Feedback	He's a good listener so he listens to me. He encourages me to keep going or keep up the good work or don't worry about it.
Negative Feedback	He makes me confront what's bothering me because I tend to put things back and not think about them and not dwell on them and he makes me confront my problems and try and figure out what I can do about it and he also because when I start thinking negative things about myself or about what I am doing I need somebody to help me think about positive things and he'll often bring up the positive things and be very encouraging that way.

Table 4.14 Barrier Themes - Definitions and Excerpts From Group A Interviews

Behaviour/Attitudes of Others: This refers to problems relating to people's behaviour or attitude that were restricting or limiting in some way. This included examples of: negative stereotypes, lack of family support, others' unwillingness to provide support, rudeness of others, unrequested assistance and specific difficulties communicating with professors.

Accessibility/Adaptability: This refers to physical barriers to individuals' complete participation in activities. It includes architectural barriers, crowded hallways, the size of the campus, lack of snow removal, lack of or inappropriate adaptations for special needs and difficulties with transportation.

Money: This refers to instances where students identified a lack of money as a limiting factor.

Individual Needs/Limitations: At times, subjects identified limitations within themselves that were a barrier to education. These included physical cognitive/behavioral limitations, age and stress regarding time or coursework.

Accessibility/ Adaptability	A school day. Let me see. Monday, Wednesday, Fridays I have 8:00 a.m. classes so I get up early to get to school. I like to be there so that I have time to get out of my car and sort of into the class before it starts. It's kind of a ruckus to get in there when I come in.

Accessibility/ Adaptability	Actually if I think about it um, on the days that I have labs, lab would be more difficult for me, hand function-wise and my level of injury is higher so I do meet with the people in my lab some of the time to, if we have work to do. [So if you had a dissection, how would those dissections, or how would you get through that?] Actually in most of my labs I just observe, either watch one person do it or a pair of people do it. It's harder I think, especially zoology ones, dissection-wise, like they have to be doing stuff underneath the microscope and of course I can't be looking through there while they are doing it so it's kind of like a second hand kind of thing and I don't really get as much from it, especially in chemistry.
Behaviour/ Attitudes of Others	I think attitudes of people. [How would that be.] Um, it's hard to explain. People are really distant. It's almost like they think of me as an outsider, like outside of the whole group, they think I don't fit in for some reason or don't belong, like single me out for some reason. And a lot of times I can notice that even though I try not to. [It's hard to get past that ...] It is. A lot of times, you know it just gets annoying some times. People staring, you know that kind of stuff.

Individual Needs/ Limitations	Um, well she has come here before and we will go out and she does a lot of stuff like carry things if we go shopping or like load my wheelchair in the care whatever, like if I put it in my car myself it's on the seat beside me so she will have to put it in the trunk.
Individual Needs/ Limitations	Okay, um I get up late in the morning, it's very hard for me to get up, I'm usually exhausted and have a lot of pain and so I usually don't, I've never been a morning person so I usually don't see anyone first thing in the morning if I can help us just to spare us both. Actually it's because I live alone that I don't really don't see anyone. And either I go to work or go to University on a typical day, it just depends which day it is. Because I am juggling part-time studying with part-time work right now and so if I go to work, I'm a physiotherapist so I usually see my co-workers and patients and so that's a really variable mixture if you talk about that scenario or I come to university and see fellow students and professors. That goes on until about 4:00. Did you want me to talk about this work situation?
Individual Needs/ Limitations	No, because by the time I finish a class I've had it. I can't. Physically I can't do it and I find that really frustrating because I need the outside contact with other students. I really miss it and feel I would benefit by it but because of, the pain that I am in, I have to go home. I was going through a period when I first started school where they were trying different medications for the pain but it just affected my school work too much so my option is to minimize that and go home and do what I have to do. Lie on a heating pad

Individual Needs/ Limitations	Getting here. Transportation. I drive myself and there are days I can't drive myself or I'll have somebody help me. Just getting around from class to class.
Accessibility/ Adaptability	Lockers. I don't have one and I feel it would be so beneficial. Carrying some of my texts I have to take to class. Like English should be Body Building 101 as far as I'm concerned. It's just terrible. So if I had a locker it would save me from transporting it from home or to the truck and in from the truck, hauling it out. I guess its. You can't move buildings. If that's where your class is that's where you have to go. You have to be there and how you get there is your responsibility.
Individual Needs/ Limitations	Ya, I feel a bit of that gap and I don't know, I feel awkward about trying to be 20 and I don't really want to be I, some of the things that I lived through when I was 20, I don't, I can't go back to that and I'm not going to. You know I don't want to present a father image but I just don't share the same sort of things.
Individual Needs/ Limitations	Well when a routine goes wrong, like my bowel or something, she says "no big deal, it will happen" stuff like that. That really, like I don't mind not walking and stuff like that, it's just the routine. Bowel routine. It really bugs me. And she's well, there's nothing you can do about that, it's just going to take a while to get used to it now.

Accessibility/ Adaptability	Ya, a regular layout, it was more the, strictly the number pad, F keys that sort of things were taken to one side as opposed to being above and of course many of the programs we are using require F key type processes so that's alright. Our requirement is 40 words a minute keyboard skill. Now at that time the world record for one-handed speed was 39 words a minute. Obviously they couldn't very well expect me to do 40 a little unreal expectation. And like most typing instructors, keep your eyes off the keyboard. There's nothing to see anyway, it's all blank. Okay, that's fine but unless I'm going to type either all in lower case or all in upper case I'm going to have to hit the shift key. Well that's fine and dandy, I can use either my little finger or my thumb and swivel off the shift unless it's the type of keyboard that's expanded left to right. You can't reach the centre keys. Switching from one to the other, it depends what classroom which type of computer you use. You tend to go right off the keyboard while you are watching the screen. I got them to take an ordinary pair of seat clamps the type that you buy at Zellers or Woolco for $1.49, thread up some rod, replace the regular little screw piece with a piece of rod about 2 feet long, slip a bit of rubber tubing over it. That way I could put it on either end of the keyboard. My wrist would strike that if I attempted to go to far because I had to unlearn two-handed typing and relearn one-handed. There is a manual out, NAIT didn't have it. I managed to finally trace it down through, going through the Fort Saskatchewan library they have this computer link-up with all the libraries in Northern Alberta and the Athabasca public library of all places had a manual on typing and it was laid out if you were missing a) the thumb on your left hand to you've got one thumb left and anything in between and I photocopied this and bound it up in the, well I don't call it library anymore, but that's what it is to me,

Individual Needs/ Limitations	I was in the Ham Radio Club and we used to meet every Saturday but it's come to the point where with this second semester work I haven't had time to go anymore so it's out of the question.
Money	Probably, had it down too. Around three weeks ago regarding a grant from Student Finances. I had some trouble with paper work and I got some advice from her on it.
Accessibility/ Adaptability Individual Needs/ Limitations	It's just, you get, you realize after your first year of university that if you don't do it, you'll get so far behind, especially for me, I get so far behind and you can't expect other people to get caught for you, like you have to do, you have to manage your time to your cycle, not adjust people's time who are helping you which takes a lot of planning but I'm only going out one day so I can get things done. Besides I have a lot of family responsibilities that, you know, if you don't .....
Individual Needs/ Limitations	It's just going to school, I haven't been able to institute everything they taught me in the cardiac rehabilitation program. You know, there are certain things you are supposed to be careful about but then diet there is very similar to a diabetic diet except there is less salt so it's not that it was a very new thing to me. But it's just because of the stress of school and it's so busy and so hectic, so time consuming, I don't do as much as I normally would if I had more time as far as cooking is concerned.

Individual Needs/ Limitations	Oh, in the morning, I would get off the couch or my bed, where ever I slept at, throw myself in the shower and get ready for school. At school, usually go for coffee in the morning in the cafeteria. Like I said there's probably a lot of people in my tech, or else who ever else I run into or other times just by myself. If I have one of my shitty days, I like to sit by myself. I have noticed a change in my the types of days I have, since my accident, I sustained a head injury in my accident. I have days when I'm in a lot of pain and what not and I don't really, I'm not in a cheerful mood.
Individual Needs/ Limitations	Other than my health? Um, probably the amount of time needing to be spent overall, that's like the biggest barrier because for people, I don't know how much you know about ME or Chronic Fatigue Syndrome, do you know?
Individual Needs/ Limitations	No one to study with. That's the worst part. No one to discuss the topics with, no one to study with.
Accessibility/ Adaptability	...in Cameron Library there are quite a few stairs to climb to get in and then they tell you, well you can use the ramp which is for wheelchairs and that's a long, long way to walk to go down that ramp and around and come up, it's a great deal of walking for a person who isn't in a wheelchair and I think all too often they gear things for the wheelchairs and
Accessibility/ Adaptability	Uh, the physical environment for starters. I do have my chair, but I knew I could not cope with that on campus, the campus was just too big, and I had to go to Disabled Student Services to figure out how that was going to work before I even decided to come here, I had to figure that out, and they were very helpful. They provided me with a scooter and they showed me how accessible each building is, and from that point on, it's been a piece of cake.

Table 4.15 Barriers - Excerpts From Group B Interviews.

Accessibility/ Adaptability	The sheer size. The size of the school and trying to get any information out of the school. It's incredible. We were lucky enough that across the back alley we had a neighbour, Colleen, she is fantastic. She works at the Registrar's office, she worked upstairs I guess. But she knew the system really well. And that was good because otherwise we would have just been lost. Going through and they don't send you things. It would be nice to go and say, what do I really need. Okay, can I have that in writing and go.
Money	Financial. At least this time around. First time around it wasn't so bad. But I come from Ontario and I basically sold whatever, I quit my job down there, worked part time to save enough money to get out here so I came out here basically with a backpack and um my cousin who I met here, I didn't turn to her, I was really willing to, I had to stay with her for a little while. And this year has been tough financially.
Individual Needs/ Limitations	No, I tended not to have that and I think it's because I don't fit into a class. Because I've been doing over a period of three years and this actually this B.Sc.N. although they say it's to your degree, very few people in fact that I have spoken to, no one has gone through it in two years. Most people have to take it in 2-1/2 or 3 years. But because I got credit for my phys ed courses for a lot of my electives and stuff, I already had that out of the way. So I don't really fit into a class, you know like, a couple of my friends are bugging this about this big picture thing that they get taken where everyone who is graduating but I don't feel like I fit into that class you know just because of the way I've gone through this.

Behaviour/ Attitudes of Others	I guess the thing would be when I was in high school there was certain teachers that I did know on a first name basis and everything and there are some professors here, I'm not saying that all professors are like this, but you kind of knew them you would go and see them um, I found, I was in a stats course and I don't know some professors, I don't know if they just don't have the ability to help you and so they leave it to the T.A.s and the T.A.s are so overwhelmed with helping that I ended up dropping this course just for the fact that I go so far behind and there are certain things that I can learn on my own but when it comes to math that's not one of them so, I just find I don't know sometimes there are certain classes like the stats class that I just can't do and I see no help through the system I guess, you know, because I did go and see the professor and I did go to the T.A.s and for me what I needed, if there was something that I missed like a basic concept, I guess the whole class missed because half the class was there so. You know for me, I found out that the most frustrating thing this year is just, you know I need help in this class but I couldn't get it. I have other friends who are in stats and you know what I was doing was different from what they were doing and something like that so that would be the most frustrating thing I guess.

Individual Needs/ Limitations	Um, she's the one who when I'm having problems in school or when I'm really stressed out because I think we have a lot of the same stress qualities. Like when I'm doing a paper, everything I go through she will go through too. I will hit a point when I am doing a paper when I'll burst into tears, I'll feel totally inept, I can't do it and she through it totally the same too. You know, and so I think we both, that's when we both feel totally inadequate.
Money	She's loaned me money on I don't know how many occasions. She'll always lend me money. She will always lend it without a question.
Individual Needs/ Limitations	I think, I just started this is my first year. I didn't know anyone here. You would walk about and you wouldn't know a person. That's about it.
Individual Needs/ Limitations	She will take me out to a movie if I'm depressed.
Accessibility/ Adaptability	It's too intimidating. Such a large class. I remember my first day in chemistry about 300 people in there. Totally scared me.
Money	[Money. How did you deal with the money problem?] I got some student loans.

Individual Needs/ Limitations	Uhuh. My children, having children. Finances weren't a big concern although there has been a loss of income because I'm not working as much so we are used to living on our combined income and now our lifestyle has changed because of income. [You mentioned your children. How are they barriers?] I feel guilty that I can't spend the time with them, that I feel I should be spending with them. I feel I should be spending more time with them so maybe my guilt is my barrier. I try to spend more time with them too which is also a barrier to my not being able to do as much work as I'd like to. Spend as much time with my school. So I'm kind of split between, I'm not giving 100% either way because I have to try to butter the bread on both sides.
Accessibility/ Adaptability	There's always the running gag that you don't have to complete your courses to complete your degree, you have to know how to get enroled and that dealing with the administration is a big gag.
Accessibility/ Adaptability	I find, like last year I went to a college and so this year at University it's a lot bigger. I guess the thing is, I guess like, not isolation so much but the realization that you are one out of 30,000 students whereas when you are at college your one, like my introductory class last year was 50 or 60 people and my introductory sociology this year it was like 400. I didn't really notice it so much at the college because I wasn't, I mean I didn't know anyone. I know more people at University than I ever knew at the college but just the numbers it really plays a big part.

Chapter 5

Discussion

Discussion of the results is organized under each of the research questions and includes considerations of how these findings add to the general understanding of social support.

Research Question 1) How does perceived social support differ between students with disabilities and non-disabled students?

In considering the first research question, it is clear that differences in reported social support between the two groups are not significant. Social network composition is also largely not significantly different between groups, with the exception of the number of professional members of personal networks reported. Students in Group A, on average, identified more professionals within their networks than Group B.

This might be explained in two ways. Possibly students with disabilities have more contact with professionals than non-disabled students. Some students with disabilities included personal care attendants in their personal networks. This could involve daily contact of a personal nature. Others included physicians, psychologists, physical or occupational therapists who they saw on a regular basis. Both types of contacts would increase the number of professionals in these student's lives.

The second explanation is that students with disabilities would be more likely to have relationships with professionals. To include these within their personal networks may attest to the importance that these individuals continue to have in these students lives.

Extreme values must be discussed further. Two male students within the Group A identified no one that they could turn to in times of stress and therefore also scored zero on all of the social support sub elements. Another older female participant from the Group A identified only one network member and therefore had a multi-dimensionality score of one. These three extreme cases appear to be quite different from their disabled peers and those in the control group where no students reported such extremely limited social resources. It is possible that with a larger sample a sub-group or groups composed of individuals with lower support might have been identified. This sub group may be more at risk than their peers due to their apparent isolation.

Clinicians should be aware that university/college students with disabilities are likely more similar to their non-disabled peers than they are different. This is important in that it sets a similar standard i.e. clients with or without a physical disability are anticipated to have similar networks. Unusually small networks are possibly problematic for either group. It is important to note that students with disabilities tended to include more professionals within their personal networks. There are two significant implications for clinicians. The first is that clinicians should recognize the privileged position that they enjoy within these personal networks. Secondly, it would be important, within the overall treatment plan, that therapists assist clients to transfer supporting roles to their peers or an appropriate support within the natural environment. In this way clients may not find themselves without the support that they need at the time of discharge. Depending upon the nature of the supports provided, within the client-therapist relationship, this may be as simple as referral to another professional, or provision of additional resources. However, assisting the client in skill development and social network enhancement should be considered with all clients.

The second clinical issue raised by this study relates to those students who are extremely isolated. The two students within Group A who described no one within their social network are likely examples of social isolation. In the clinical setting it would be important to complete further assessment to determine actual social resources available to these students. In this case the therapeutic relationship may be particularly significant. There may be a need for network intervention to mobilize available resources or to assist isolated clients in expanding their networks. It is likely most important to recognize the extreme nature of this level of isolation and to take action to investigate the network resources available to the individual.

Research Question 2) What are the relationships between the following independent variables and social support variables?

The second research question identified two independent variables that correlated with social support: gender and age. Gender correlated with total PSNI score and all PSNI sub-scale scores with the exception of multi-dimensionality and network size. As noted before, female students consistently reported higher PSNI scores than males. These results are not surprising and confirm the work of previous authors who have demonstrated similar gender differences regarding support.

In considering the clinical implications of these results it is likely merely a case of recognizing potential risk factors related to social support. Of particular interest to occupational therapists is the further finding that there was an interaction effect demonstrated between gender and disability. A therapist would need to be aware of the added risks of social isolation faced by males with disabilities. Unfortunately, as not all of the statistical assumptions required by ANOVA were met, the results of the ANOVA must be interpreted cautiously. Further research with a larger sample is required to verify these interaction effects.

Age did not correlate with total PSNI score but did correlate positively with social support sub-scales of initiation, satisfaction, reciprocity; and negatively with network size. Perhaps older students are more likely to be in marriage and family situations which would possibly increase the intimacy and/or durability of network relationships. Also older students may be more comfortable in their life roles and therefore, more confident initiating supportive interactions. What are the implications of decreased network size with age? A decreased network size may be related to a decrease in superficial relationships and greater reliance on more significant relationships.

Research Question 3) What examples of social support and barriers to university access are described by these two groups of students and how does support relate to the process of overcoming these barriers?

In considering the third research question the results are mixed. There are certainly similarities in how the two groups describe their social supports. This is most evident when considering the content and process of social support. Both groups describe similar social activities in which they interact with their personal networks.

The clinical significance of this theme, activity as context for support, is intriguing. In order for therapists to include social support within assessment and program development, they may need to expand their activity analysis to include social contacts significant to that activity. A limited activity level or limited variety in activities may effect opportunities for social exchange and social support. Further research in this area is needed in order to more clearly understand the importance of activity to social support.

The significance of conversation or verbal exchange as the context of social support was quite clear in the interviews. As has been mentioned earlier, most supportive exchanges involved verbal interaction. Emotional support was a content area that was well represented in the interviews. This could be explained in that students placed highest emphasis upon this aspect of social support. Another explanation would be that students understood social support to mean emotional support. Some students described social supports in which they apeared to define all relationships as providing emotional or informational support. Thus, when discussing support, individuals may have their own pre-set notions of what is appropriate to label as support.

This would be of particular interest to clinicians. If social support is included in the assessment process it will be important to take the time to assist the client in developing a personal definition of support. This would assist the clinician in understanding the value the client places on specific aspects of support as well as to direct the interview process towards those aspects of support that the client has not considered. This sort of process will require careful consideration to ensure that the client's perspective on support is respected at the same time as maximizing the client's potential for social integration. As well clinicians will need to be aware of the broader picture of social supports. This may include expanding their perspective on social support.

Emotional support is a complex aspect of support. In this study there were a number of sub-themes unique to Group A students. This included the provision of physical comfort such as massage, back rub and neck or back manipulation. These were expressed by students who experienced pain. It is possible that this is actually a sub-theme within physical assistance rather than emotional support. However, other references to touch were within an emotional support context. This form of touch is similar to the sort of handling common in physical rehabilitation. Perhaps this suggests that while touch may represent physical assistance it may also relate to emotional support. It is important for therapists in physical to consider the dual nature of handling and be aware of the potential socially supportive nature of touch.

Another clinically significant finding was the sub-theme of "understanding". Students with disabilities often noted the importance of the ability of another person with a disability to "understand" them. This supports the popular notion of providing peer support in the form of self-help groups. This may be important both in rehabilitation settings as well as in schools and universities. The present move towards "normalization" and mainstreaming may limit the opportunity for this sort of contact amongst young individuals with disabilities. Perhaps there is a role for clinicians to facilitate this form of peer support both for the school age individual as well as after school or in post-secondary institutions.

It is interesting that reference to "love" was not common within the interviews. Perhaps it is not a word commonly used in conversation. It may be significant that it was only mentioned by five Group A students. Perhaps most students would have required an opening or an invitation to discuss "love". It is unclear as to the significance of this finding.

As well, a unique sub-theme of emotional support was that of protectiveness. Again this was only mentioned by four Group A students. Interestingly, it was mentioned twice regarding siblings. Perhaps protectiveness amongst family members is common and merely seen as important by these two individuals. Perhaps some individuals with disabilities have unique experiences of increased protective feelings from their siblings. It is important that clinicians be aware of these sort of protective feelings and willing to assist the client and family to understand these feelings.

The specific instrumental supports unique to Group A are interesting. Many of these instrumental supports are directly related to individual needs and physical barriers faced by persons with disabilities. As well, it is important that many supports described do not necessarily relate to attendance at post-secondary institutions but rather to other environments such as home management, community access or leisure pursuits. These issues are broader than access to education. Clinicians need to consider this broader planning base, as they interact with persons with disabilities, if intervention is to be effective in assisting individuals in attaining their maximum educational potential.

Instrumental support is interesting in that activity is not only the context of the support process but is also the support itself. Instrumental supports actually consist of actions like loaning, transporting, repairing, providing child care or assisting, and adapting. These are activities that may be shared in a "helping" mode or not shared in a "giving" mode. Clients may need support to develop reciprocal relationships with caregivers and the cooperation of network members may be quite important to achieve this goal. These tasks represent the physical and cognitive burdens that are placed upon caregivers and other network members. The therapist will need to recognize the significance of these sorts of supports in maintaining the individual in their educational or other productive roles.

The therapist may have a role in assisting caregivers to identify the instrumental supports that they may offer and to assist the larger network in assuming support roles that are too burdensome for family members. Therapists may have a role in advocating for needed supports within the community in order to support the client's right to meet maximal potential as well as to protect the caregiver from burnout.

Those supports that were specific to attending university/college are also important. In general, it was positive to see that students received instrumental supports necessary to attend university/college. Further discussion on this area of support will be included under barriers.

Probably the most significant finding for clinicians is the finding that many students with disabilities include professionals within their personal network and consider professionals to be significant in the provision of informational support. What is the clinical significance of this finding? Therapists may see their role to be limited to the referral question. However, as professionals they may have access to a broad range of information regarding physical management and adaptations as well as possible information regarding university/college or resources for information regarding supports for funding. It is important that therapists develop a broader vision of their role regarding informational support in order that they maximize their own potential to empower clients to attain personal educational goals.

Appraisal support is an interesting aspect of support that appears to be closely related to emotional support. It is likely that much of the verbal emotional support actually provides appraisal of performance while positive appraisal appears to also provide emotional support. Even negative appraisal statements such as "You are working too hard." have an element of care and concern in them.

It is difficult to deduce the clinical significance of these findings. Therapists are constantly involved in the provision of both positive and negative feedback as part of the therapeutic process. Clinicians must bear in mind the importance of feedback regarding activities which supports the client's feelings of mastery. This is important in light of the increased reliance, demonstrated by these students, upon professionals as network members.

A wide range of barriers was described within the interviews. This discussion will focus upon the experiences of students with disabilities. Attitudes and behaviours of others can be a serious barrier to success in an academic setting. Fichten (1989) has drawn attention to the significant effect of negative beliefs, held by able-bodied students, upon the uneasy interactions between able-bodied students and students with disabilities. Considering the likelihood that able-bodied students in this area share these negative beliefs it is almost surprising that this was not described by more students.

Clinicians may come upon these negative beliefs from a number of sources. Within themselves, therapists need to be acutely aware of their own beliefs that may be limiting them in their ability to have positive visions of the potential of individuals with disabilities. Secondly, the beliefs may be held by individuals with a disability themselves, as is described by Fichten et al (1989). The family and personal network may also be a source of negative beliefs while faculty and the public at large may be a final source of negative beliefs. Fortunately Fichten reminds us that, at least for professors, contact with students with disabilities appears to improve their comfort level.

What is the clinical significance of these attitudinal barriers? Clinicians need to be aware of negative attitudes and their possible role to limit potential achievement. As well clinicians need to take an advocacy role in promoting positive attitudes towards persons with disabilities within health care institutions, educational institutions and the community at large.

Much of the situations in which students with disabilities encounter negative attitudes occurred within the context of requests for assistance, either of professors or of their able-bodied peers. Perhaps another role for clinicians is to consider the importance of preparing their clients to make requests and to actively promote positive attitudes through their everyday social interactions. This might involve social skills training as part of a total rehabilitation or developmental focus.

Barriers were reported much more frequently by Group A students than Group B. In general, the coping strategies reported were often through the use of individual approaches as well as through the use of emotional or instrumental supports. Each of these coping strategies requires the individual to have some prerequisite skills or information. In the case of personal resources this involved either having adequate social skills to deal with attitudes or barriers or having adequate organizational skills to prepare early enough to utilize instrumental supports. These organizational skills and social skills would also be a factor in the use of social supports. The individual must be able to request supports and arrange for supports as well as being able to schedule ahead to allow time for the use of supports. This can be clearly seen in the use of DATS. The individual must plan ahead to book transport, be assertive in getting these bookings made and then flexible enough to allow for the extra time required for pick-up, transport and drop-off.

This again may be an area of clinical importance. Perhaps therapists need to assess the individual's social and planning skills and then assist the client in developing skills specific to the barriers that are anticipated or encountered.

The second coping strategy for barriers was the use of emotional and instrumental supports. This is significant in that the connection is made between social support and access to post-secondary institutions. One of the strong themes, on support in response to barriers, was the use of established support services such as DSS, University of Alberta and SSD, NAIT. This was mostly positive. Another approach that students took to overcome barriers was to request assistance. This seemed to be relatively successful although some students did report that this was not always successful, both in regards to requests of professors and fellow students. Again, this is an approach that will require prerequisite social and organizational skills.

The final set of barrier related themes dealt with the individual limitations faced by students. The previous discussion of instrumental supports demonstrates the importance of considering social support as a factor in overcoming barriers. This focuses attention on the importance of seeing the individual holistically. As well, all environments must be considered. The educational environment cannot be seen as separate from home and community. It is important that individuals with disabilities are able to meet their basic needs in order to be able to address the demands of ongoing education and training.

CHAPTER 6

CONCLUSION

In this study the social supports of two groups of students have been explored. Group A represents post-secondary students with disabilities and Group B represents ablebodied students. A multidimensional approach to social support was taken. Tardy's model of social support outlined a wide range of social supports which were considered in this study. The use of Tardy's (1985) model of social support has been crucial. It has provided the necessary structural mechanism by which a complex phenomenon such as social support could be viewed.

The two groups of students demonstrated no significant quantitative differences in these areas of social support, with the exception of the greater representation of professionals in the personal networks of students with disabilities. The qualitative analysis suggests, that while support elements appear to be quantitatively similar between groups, the actual supportive behaviours ,experienced by individuals, may be qualitatively different. Specifically, physical comfort, the common understanding among persons with disabilities, protectiveness of family members, and the significance of supports to overcome personal, educational, home and community barriers are all themes within support content that appear to be more important to students with disabilities.

In considering the significance of the seven independent variables that were examined, only gender was significantly related to social support. Within this relationship an interesting effect between gender and group was identified. This involved a higher PSNI score for women with disabilities, followed by women without disabilities, men without disabilities while men with disabilities had the lowest PSNI scores. This may be clinically significant in that men with disabilities may be at greater risk of social isolation.

Within the qualitative analysis the theme of barrier appears to be predominantly reported by students with disabilities. The primary barrier related themes are: attitudinal, accessibility/adaptability and individual needs/limitations. Two other themes shared by both groups were related to funding and child care. The clinical implications of these findings have been discussed previously. The qualitative analysis has provided a clearer understanding of the day to day experience of support within a college/university setting. As well, the qualitative analysis has provided insights into the relationship between social support and occupational therapy, by identifying the activities theme within the interviews.

Generally the challenges identified by this study are for clinicians to provide professional supports geared towards ensuring that individuals with disabilities enter university/college with the prerequisite skills and knowledge to overcome barriers that they will encounter.

Directions for Future Research

A number of issues have been raised by this study. Are there differences between those students with physical disabilities who attend college/university and those who do not, with regard to their social support? If not, is level of social support predictive of future success at the college/university level? Further research to answer these questions might clarify the role of occupational therapy in empowering adolescents with disabilities to take advantage of the educational opportunities and meet their productivity needs more effectively.

A related question is raised by the three students within Group A with extreme PSNI scores. Do such students represent a sub-group? Are students with extremely limited personal networks at risk with regard to their future educational or vocational success? The clinical importance of social isolation is also a concern when considering the lower social supports reported by male students with disabilities in this study. Answers to these questions may be possible by replicating this study with larger samples. Alternate designs that include academic success as a dependent variable would also be valuable. Results of such research would provide a clearer direction for clinicians when working with socially isolated students.

The role of activities as a context within which social support is provided is very important to occupational therapists. Further research to define that relationship would help to clarify the significance of the social environment in the occupational performance model.

In summary social support is recognised to be a key issue in health. It is important that occupational therapists consider social support within their clinical practice. This study has demonstrated that students with disabilities presently accessing post-secondary education do not differ in their social support quantitatively from their peers, although qualitative differences were evident. A wide number of supports were described that directly related to daily educational support needs.

Therapists are in a key role to assist people with disabilities to develop appropriate supports and to achieve their personal educational goals. In order to complete this task it is important that therapists acquire skills in social support assessment. Therapists could use a network diagram procedure and include social contacts as standard questions in the activities of daily living interview (.... and who do you do that with). More important than assessing social support is to consider the role of support in achieving a client's maximum potential. Support may be the important element in some situations to achieve this goal. Occupational therapy, as a profession, has accepted the importance of the social environment as important to occupational performance. Therapists may need to more actively consider the social environment in keeping with this view.

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APPENDIX A

RECRUITMENT LETTER

Hello

My name is Martin Anderson. I am a graduate student in occupational therapy and am interested in learning more about the support used by both physically challenged and able-bodied students.

Social support has been identified as an important issue for individuals who face stressful situations, but little is known about how university students use support to cope with their studies.

I would like to invite you to participate in a research project into the support used by students. Your ideas and feelings regarding appropriate supports and barriers to university education will help us to develop better support programs for physically challenged and able bodied students at the University of Alberta.

This project will partially fulfil the requirements of a Masters of Science degree in Occupational Therapy, and has been approved by Disabled Student Services.

Participants in the study complete a questionnaire and participate in an interview, both tasks should be able to be completed in 1 to 1.5 hours. All information that you provide will be completely confidential.

If you would like to know more about this study, please fill out the attached form, and mail it back in the enclosed envelope.
Call and leave your name and number if you wish to discuss any aspect of this study.

You may contact me at __________.

Martin Anderson B.S. O.T. (C)
Graduate Student
Department of Occupational Therapy
University of Alberta

APPENDIX B

REPLY FORM

To: Martin Anderson BSc OT (C)
Department of Occupational Therapy
Faculty of Rehabilitation Medicine
University of Alberta
Edmonton, Alberta T6G 2G5

Re: Social Support and Barriers to University Education

Yes, I am interested in learning more about this study. My

telephone number is ____________________. You may call me to

discuss the study. My name is_________________________________ (please

print) the best time of day to contact me is_____________.

PLEASE RETURN THIS FORM IN THE ENCLOSED ENVELOPE

THIS WEEK

OR TELEPHONE

479-7618

THANK YOU FOR YOUR COOPERATION

APPENDIX C

CONSENT FORM

Title:Social Supports and Barriers to University Education Reported By Students With Physical Disabilities

Investigator: Martin Anderson BSc OT (C)
Graduate Student
Department of Occupational Therapy
University of Alberta

Graduate Supervisor: Helen Madill PhD OT (C)
Graduate Studies Coordinator
Department of Occupational Therapy
University of Alberta

Purpose: The purpose of this study is to describe the supports and the barriers to university education that are experienced by students attending the University of Alberta. Participants will complete a mailed out questionnaire and participate in a tape recorded interview conducted by the primary investigator. Both the questionnaire and the interview will be on the topic of support including emotional, financial and physical supports. As well the interview will focus on barriers to university education. The questionnaire should take under 30 minutes to complete and the interview will require between 1 and 1.5 hours. Interviews will be conducted at the University of Alberta or in the participants' homes. Participation in the study will not place the students at any risk nor will it provide any individual benefits.

Consent:I, ____
agree to participate in the study described above. I understand that my participation in the study is completely voluntary and that I may withdraw at any time with no consequences. I also understand that all information gathered for this study will be treated confidentially, and will be destroyed once it has been analyzed. My name will not appear on any of the completed questionnaires, only an identifying code number. Furthermore my name will not be associated with any publication arising from this research.

Once the study is complete a summary of the results will be provided to those participants who request it.

All questions should be directed to Martin Anderson at 479-7618.

____
participant's signature
date

____

investigator's signature
date

Acknowledgement: This study has been made possible by a research grant from the Glenrose Rehabilitation Hospital.

APPENDIX D
INTERVIEW GUIDE

This interview guide will be used as a checklist to insure that the same topics will be covered in each interview. Sample questions are provided to assist the interviewer in entering topics that do not naturally arise in the course of the discussion.

PREPARATION

The interviewer will call the subject and set the time and place of the interview. The use of recording equipment will be discussed.

PURPOSE

The interviewer will review the purpose of the research. He will review the confidential and voluntary nature of participation and explain the need for the tape recorder.

NETWORK DIAGRAM

The interviewer will refer to the network list that has been completed as the first part of the PSNI. Subjects will be encouraged to add anyone to the network list, if they feel that this is appropriate. Additional members will be noted and will be dealt with separately at the time of analysis. The interviewer will assist the subject in constructing the network diagram. The network diagram is constructed on a prepared sheet indicating a central network ego and is divided into four sections representing family, friends, school contacts and professionals. Network contacts are represented by their initials on paper circles. The subject will be advised to pay particular attention to the distance between network members. The subject will be encouraged to continue to rearrange the diagram until it appears accurate. Once the constellation of the network has been determined the initials will be permanently attached. Network contacts will than be drawn in as indicated by the subject.

" Who in this group does ____ know? "
" How do they know each other?"
" Do they know each other in any other situations? "
" Who else do they know? "

The subject will be requested to estimate the frequency of contacts that they have with each of the network members. The subject will than verify the contacts that have occurred over the previous month.

" How often do you see ____ ? "
" When was the last time you saw ____ ? "
" What were you doing when you saw ____ ? "
" How long were you together ? "
" When did you see _____ before that ? "